

GURNEY

BOILERS &
RADIATORS

GURNEY HEATER MFG. COMPANY

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6- ASD TECH

GURNEY

BOILERS & RADIATORS



GURNEY HEATER MFG. COMPANY

BOSTON, MASS.

200 Franklin Street

NEW YORK

11 East 42d Street

PHILADELPHIA

108 North 17th Street

WASHINGTON

711 13th Street N. W.





Prices and data listed herein supersede all former lists, which should be destroyed.
Prices subject to change without notice.

INTRODUCTORY

Boilers, radiators and specialties listed in this catalog are the product of over 50 years experience in the manufacture and sale of high grade steam and hot water heating apparatus and accessories.

This long experience, together with most careful research to attain the highest efficiency and economy, the best materials procurable, and latest foundry practices, enables us to produce the most reliable and therefore the most satisfactory heating appliances.

Our customers are assured of approved constructions to meet the varying conditions in the installation of steam and hot water heating plants.

With our extensive manufacturing equipment, excellent shipping facilities and well trained organization, we are prepared to give the best possible service.

All orders will receive most careful and prompt attention.

GURNEY HEATER MFG COMPANY

Edition Corrected to July 1st, 1919

Discounts quoted to the Trade only



Rating Conditions

The ratings of Gurney Boilers are based on the maintenance of 2 pounds pressure at the boiler, and the condensation of 0.25 pounds of steam per foot of radiating surface standing in still air at 70 degrees.

Water ratings are based on the maintenance of a temperature of 180 degrees in the water leaving the boiler and the transmission of 150 B. T. U. per foot of radiating surface in still air at 70 degrees.

The listed ratings of all boilers are for direct radiation, and are based on the assumption that the piping (flow and return mains and risers) shall be figured as radiating surface in addition to the direct radiation, in estimating the size boiler required.

Usual allowance must be made for the use of pipe coils, wall radiators, direct-indirect and indirect radiation. The following increases are suggested:

Pipe coils or wall radiators, each foot of surface to be considered equivalent to $1\frac{1}{4}$ feet of direct radiation.

Direct-Indirect radiators, each foot of surface to be considered equivalent to $1\frac{1}{2}$ feet of radiation.

Indirect radiation, each foot of surface to be considered equivalent to 2 feet of direct radiation.

Indirect radiation with the fan system, each pound of steam condensed per hour is equivalent to 4 feet of direct steam radiation.

When a pipe coil or cast iron section is placed in the fire-pot of a boiler for heating water for domestic use, additional capacity should be figured. For each gallon of storage capacity, 2 feet of direct steam radiation, or 3 feet of direct water radiation.

Heating water for domestic purposes can be better accomplished by the use of an independent water supply boiler. This method provides ample supply on every day of the year with a trifling fuel expense.

Ratings of all boilers and radiators are shown in empirical feet, a unit to denote the relative heating power of boilers and the cooling power of radiators.

Working Pressures

All boilers are built on the A. S. M. E. standard, and are tested under a water pressure of 60 pounds per square inch. The maximum working pressure should never exceed 15 pounds per square inch on steam boilers, or 30 pounds per square inch on water boilers.

Trimmings

The trimmings furnished with steam boilers include low pressure steam gauge, water column, water gauge, try-cocks, and automatic damper regulator.

No trimmings are furnished with water boilers.

Safety valve tappets comply with the A. S. M. E. requirements.

Guarantee

On account of the varying conditions incidental to their installation, our goods are guaranteed only to the extent of furnishing new sections for any found defective in manufacture. No claim will be allowed unless presented within 60 days from receipt of goods. Goods must not be returned unless by special permission, and when so returned will be subject to a discount.

Terms

Orders from unknown correspondents must be accompanied by a remittance or the usual trade references.

All goods are shipped at buyer's risk, and should be examined carefully before signing railroad receipts. If transportation company tenders delivery of goods in bad order, buyer or his agent should insist on railroad agents making notation of condition on freight bills, thus enabling buyer to secure prompt payment of claims filed against railroad company for value of damaged material.

The responsibility of this Company ceases upon delivery of goods in good order to transportation companies.



Down-Draft Smokeless Boilers

For Soft Coal

Gurney Down-Draft Smoke-Consuming Boilers embody all the well-known and desirable features of the Gurney Bright Idea Water Tube construction, with the addition of a water tube grate and down-draft principle, which makes them the most practical smoke-consuming type of boiler now on the market.

The sectional view on page 6 gives a good idea of the wonderfully effective heating surfaces, long fire travel and arrangement of water tubes and grates. The upper grates are hollow and filled with water, which, with the tubes immediately below them, are entirely surrounded by fire and constitute the most active and effective heating surface known. The large amount of prime fire surface constituting the balance of the heating surface, which is all exposed to the direct action of the fire, assures the absorption of every available heat unit.

Gurney Down-Draft Smoke-Consuming Boilers are of the header type, resulting in large steam reserve space; and the headers are connected to the sections by extra-heavy three-inch nipples, with heavy lock nuts, the best and most dependable form of construction known.

All other parts of these boilers are identical with regular Gurney Bright Idea construction, which has become the recognized standard throughout the country. The steady water line, efficiency in operation, great economy in fuel consumption, durability and excellent general construction throughout, justly commend the Gurney Bright Idea Series to those desiring the utmost in boiler construction.

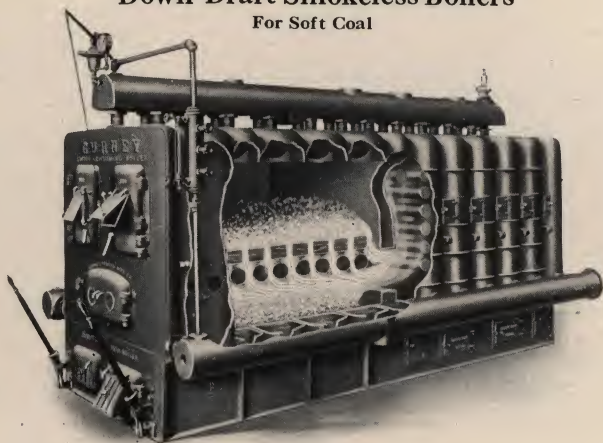
Chimney Sizes for Down-Draft Boilers

Amount of Steam Radiation, feet	Size Chimney Flue, inches	Height Chimney Flue, feet	Amount of Steam Radiation, feet	Size Chimney Flue, inches	Height Chimney Flue, feet
1200 to 1500	12 x 12	40	6500 to 8750	24 x 24	80
1500 to 2500	16 x 16	55	8750 to 10000	28 x 28	80
2500 to 3000	20 x 20	60	10000 to 10500	32 x 32	80
3000 to 3500	20 x 20	65	10500 to 13000	32 x 32	90
3500 to 3800	20 x 20	70	13000 to 14000	36 x 36	90
3800 to 4200	20 x 20	75	14000 to 14500	36 x 36	95
4200 to 6500	24 x 24	75	14500 to 15000	36 x 36	100



Down-Draft Smokeless Boilers

For Soft Coal



No. 1289-S Down-Draft Steam Boiler

Principle

The fuel is fed into a small coking oven that is surrounded by thin layers of water. The bottom or grate of this chamber is made of tubes of *cast iron* containing water. As combustion begins, particles of incandescent fuel drop through these tubes and form a bed of burning coals on the lower grate, akin to incandescent coke. (*See illustration.*)

Then the heavy, greasy gases, rich in heat producing material (the very heat value that is wasted in any boiler that makes smoke), dive down between these tubes in leaving the coke oven or gas making chamber.

As these rich gases pass over the glowing embers on the lower grate, they at once burst into an intense white flame of tremendous heating power. As this flame is established it is conducted into the *combustion* part of the boiler, which is really a *gas burning boiler by itself*. This gas burning part is built to provide a notably long fire travel, in which this blow like gas flame is thrown again and again upon iron surfaces containing thin layers of water. (*See illustration.*)

When the burnt-out, exhausted gases finally reach the chimney flue the water in the boiler has absorbed that heat which usually goes away in a smoke cloud, and the effectiveness of this principle is brought home to the pleased owner by a fuel bill cut to the extreme.

For Dimensions, Capacities, etc., see page 7.



Down-Draft Smokeless Boilers

For Soft Coal

General Dimensions, Capacities and List Prices

No. of Boiler	Steam- Rating* Feet	Steam List Price	Water Rating* Feet	Water List Price	Total Lgth. Over All Ins.	Size of Water Grate Ins.	Grate Area Square Feet	Dia. Smoke Outlet Ins.	Steam Size Outlets Ins.	Steam Size Inlets Ins.	Water Size Outlets and Inlets Ins.
1050	1250	\$525	2000	\$510	71	28x26	10.10	12	2-4	2-3	2-4
1051	1600	615	2650	600	77	28x32	12.44	12	2-4	2-3	2-4
1052	1900	700	3125	685	89	28x32	12.44	12	3-4	3-3	3-4
1053	2250	790	3700	775	95	28x38	14.76	12	3-4	3-3	3-4
1054	2600	880	4300	865	101	28x44	17.10	12	3-4	3-3	3-4
1055	2900	965	4775	950	113	28x44	17.10	12	3-4	3-3	3-4
1056	3250	1055	5350	1040	119	28x50	19.44	12	3-4	3-3	3-4
1280	3500	1075	5600	1055	72	48x30	20.00	22	2-6	2-4	3-4
1281	4000	1175	6400	1155	79	48x37	24.67	22	2-6	2-4	3-4
1282	4500	1275	7200	1255	91	48x37	24.67	22	2-6	2-4	3-4
1283	5000	1375	8000	1355	98	48x44	29.04	22	2-6	2-4	3-4
1284	5500	1475	8800	1455	105	48x51	34.00	22	2-6	2-4	3-4
1285	6000	1575	9600	1555	117	48x51	34.00	22	3-6	3-4	4-4
1286	6500	1675	10400	1655	124	48x58	38.67	22	3-6	3-4	4-4
1287	7000	1775	11200	1755	136	48x58	38.67	22	3-6	3-4	4-4
1288	7500	1875	12000	1855	143	48x65	43.34	22	3-6	3-4	4-4
1289	8000	1975	12800	1955	155	48x65	43.34	22	3-6	3-4	4-4
1290	8500	2075	14000	2055	162	48x72	48.00	22	3-6	3-4	4-4
1291	9000	2175	15850	2155	174	48x72	48.00	22	3-6	3-4	4-4
1292	9500	2275	15675	2255	186	48x72	48.00	22	3-6	3-4	4-4

*See Rating Conditions, page 4.

Height of water line, 1000 Series Steam Boilers, 55 inches; 1200 Series Steam Boilers, 60 inches.

Height including drum, 1000 Series Boilers, 70 inches; 1200 Series Boilers, 80 inches.

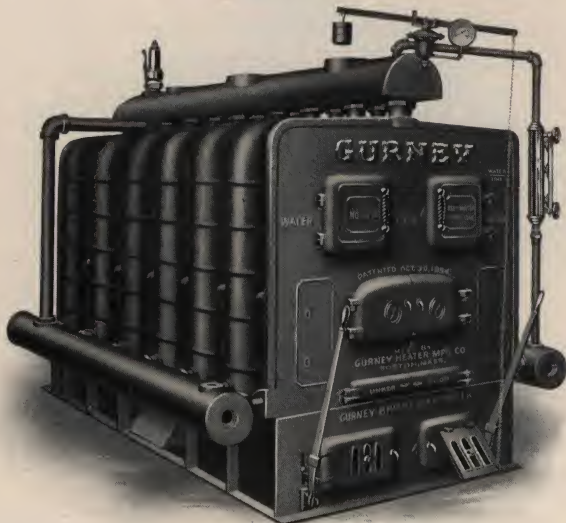
Width including drums, 1000 Series Boilers, 56 inches; 1200 Series Boilers, 82 inches.

All boilers furnished with bridgwall section and combustion chamber. **Larger capacities furnished on special order.**



Bright Idea Sectional Boilers

48 Inch Grate



No. 48-14-S Steam Boiler

STEAM

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
48-10-S	5000	\$1345	Seraph	48x49	16.33	2-6	2-4
48-11-S	5750	1495	Seton	48x56	18.67	2-6	2-4
48-12-S	6500	1645	Sheaf	48x63	21.00	2-6	2-4
48-13-S	7250	1795	Shekel	48x70	23.33	2-6	2-4
48-14-S	8000	1945	Shone	48x77	25.67	3-6	2-4
48-17-S	8750	2095	Sibyl	48x84	28.00	3-6	2-4
48-18-S	9500	2245	Signet	48x91	30.33	3-6	2-4
48-20-S	10000	2345	Silvox	48x91	30.33	3-6	2-4
48-22-S	10500	2445	Simler	48x91	30.33	3-6	2-4

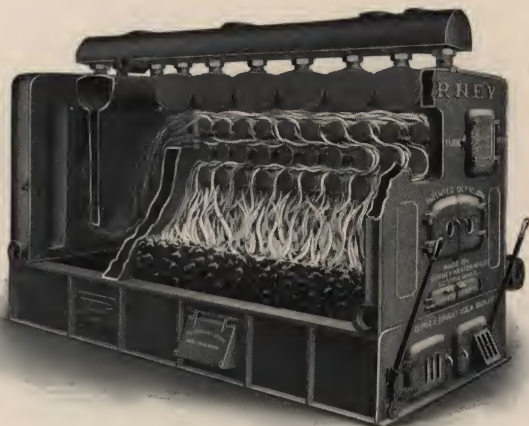
*For rating conditions, see page 4.

Height water line, 60 inches. Height including trimmings, 92 inches. Width including drums, 84 inches. For other measurements see pages 14 and 15. Larger capacities furnished on special order.



Bright Idea Sectional Boilers

48 Inch Grate



No. 48-17-W Water Boiler

WATER

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
48-10-W	8250	\$1325	Torsion	48x49	16.33	2-6	2-6
48-11-W	9500	1475	Trapan	48x56	18.67	2-6	2-6
48-12-W	10725	1625	Trefoil	48x63	21.00	2-6	2-6
48-13-W	12000	1775	Trenchant	48x70	23.33	2-6	2-6
48-14-W	13200	1925	Tribute	48x77	25.67	3-6	3-6
48-17-W	14500	2075	Triver	48x84	28.00	3-6	3-6
48-18-W	15675	2225	Trope	48x91	30.33	3-6	3-6
48-20-W	16500	2325	Trosca	48x91	30.33	3-6	3-6
48-22-W	17325	2425	Tugon	48x91	30.33	3-6	3-6

*For rating conditions, see page 4.

Height including drum, 80 inches. Width including drums, 84 inches.

For other measurements see pages 14 and 15.



Bright Idea Sectional Boilers

40 Inch Grate



No. 40-12-S Steam Boiler

STEAM

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
40- 9 S	3200	\$965	Tesack	40x44	12. 22	1-4 1-6	2-4
40-10-S	3650	1060	Thalla	40x50	13. 88	1-4 1-6	2-4
40-11-S	4100	1155	Tharos	40x56	15. 55	1-4 1-6	2-4
40-12-S	4550	1250	Theban	40x62	17. 22	1-4 1-6	2-4
40-13-S	5000	1345	Thebeth	40x68	19. 00	1-4 1-6	2-4

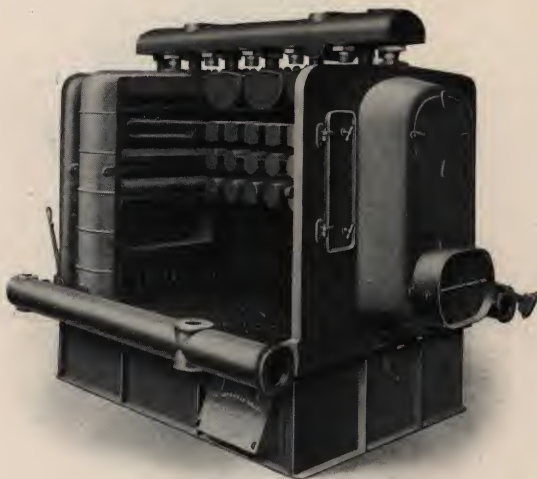
*For rating conditions see page 4.

Height water line, 57 $\frac{3}{4}$ inches. Height including trimmings, 85 inches. Width including drums, 72 inches. For other measurements see pages 14 and 15. Can be furnished with bridgwall and combustion chamber (reducing length of grate eight inches) on special order.



Bright Idea Sectional Boilers

40 Inch Grate



No. 40-12-W Water Boiler

WATER

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
40- 9-W	5275	\$945	Talbot	40x44	12. 22	1-4 1-6	3-4
40-10-W	6025	1040	Talegalla	40x50	13. 88	1-4 1-6	3-4
40-11-W	6775	1135	Talinum	40x56	15. 55	1-4 1-6	3-4
40-12-W	7500	1230	Taluk	40x62	17. 22	1-4 1-6	3-4
40-13-W	8250	1325	Talpa	40x68	19. 00	1-4 1-6	3-4

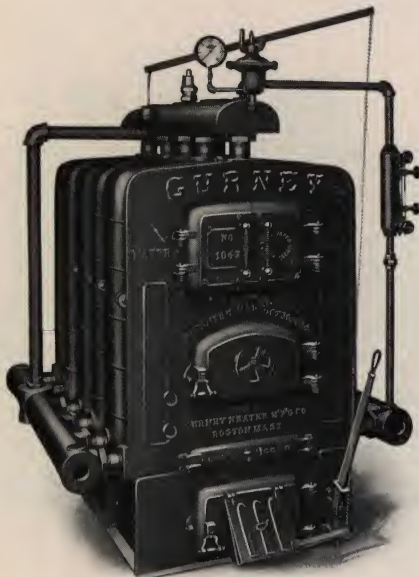
*For rating conditions see page 4.

Height including drum, 73 inches. Width including drums, 72 inches. For other measurements see pages 14 and 15. Can be furnished with bridgewall and combustion chamber (reducing length of grate eight inches) on special order.



Bright Idea Sectional Boilers

28 Inch Grate



No. 28-9-S Steam Boiler

STEAM

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
28- 7-S	1600	\$580	Tegular	28x32	6.22	2-4	2-3
28- 8-S	1900	660	Telamon	28x38	7.38	2-4	2-3
28- 9-S	2200	740	Telluric	28x44	8.55	2-4	2-3
28-10-S	2500	820	Tenuto	28x50	9.72	3-4	3-3
28-11-S	2800	900	Teretial	28x56	10.88	3-4	3-3

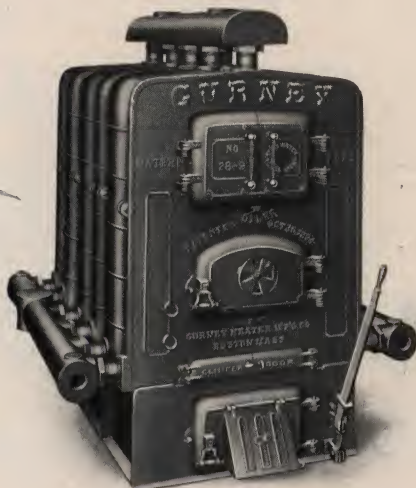
*For rating conditions see page 4.

Height water line, 55 inches. Height including trimmings, 82 inches. Width including drums, 58½ inches. For other measurements see pages 14 and 15. Can be furnished with bridgwall and combustion chamber (reducing length of grate eight inches) on special order.



Bright Idea Sectional Boilers

28 Inch Grate



No. 28-9-W Water Boiler

WATER

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
28- 7-W	2650	\$560	Tacksman	28x32	6.22	2-4	2-4
28- 8-W	3150	640	Tahona	28x38	7.38	2-4	2-4
28- 9-W	3650	720	Taira	28x44	8.55	2-4	2-4
28-10-W	4150	800	Takel	28x50	9.72	3-4	3-4
28-11-W	4650	880	Talaria	28x56	10.88	3-4	3-4

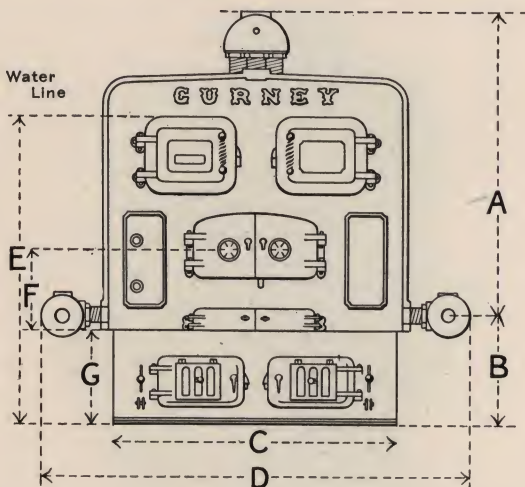
*For rating conditions see page 4.

Height including drum, 70 inches. Width including drums, 58½ inches. For other measurements see pages 14 and 15. Can be furnished with bridgewall and combustion chamber (reducing length of grate eight inches) on special order.



Bright Idea Sectional Boilers

Measurements



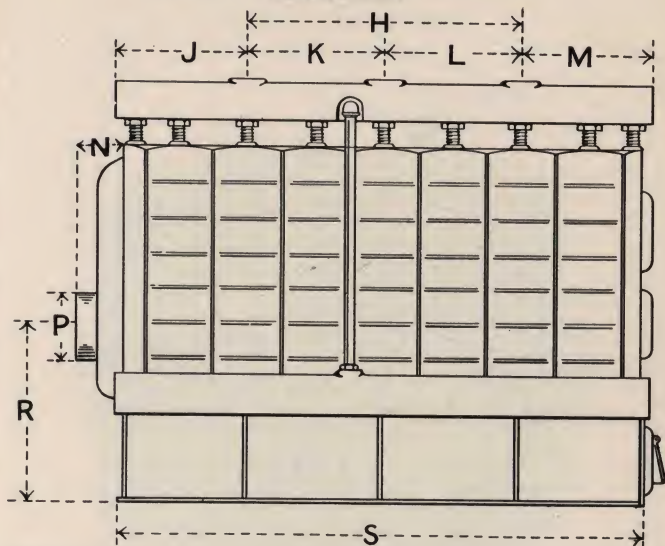
FRONT ELEVATION

Cat. No. Steam-Water	A	B	C	D	E	F	G
28-7	53 $\frac{7}{8}$	16 $\frac{1}{8}$	35 $\frac{1}{4}$	58 $\frac{1}{2}$	55	15 $\frac{3}{4}$	14
28-8	53 $\frac{7}{8}$	16 $\frac{1}{8}$	35 $\frac{1}{4}$	58 $\frac{1}{2}$	55	15 $\frac{3}{4}$	14
28-9	53 $\frac{7}{8}$	16 $\frac{1}{8}$	35 $\frac{1}{4}$	58 $\frac{1}{2}$	55	15 $\frac{3}{4}$	14
28-10	53 $\frac{7}{8}$	16 $\frac{1}{8}$	35 $\frac{1}{4}$	58 $\frac{1}{2}$	55	15 $\frac{3}{4}$	14
28-11	53 $\frac{7}{8}$	16 $\frac{1}{8}$	35 $\frac{1}{4}$	58 $\frac{1}{2}$	55	15 $\frac{3}{4}$	14
40-9	54 $\frac{1}{2}$	18 $\frac{3}{4}$	48 $\frac{1}{2}$	72	57 $\frac{3}{4}$	15	16 $\frac{1}{2}$
40-10	54 $\frac{1}{2}$	18 $\frac{3}{4}$	48 $\frac{1}{2}$	72	57 $\frac{3}{4}$	15	16 $\frac{1}{2}$
40-11	54 $\frac{1}{2}$	18 $\frac{3}{4}$	48 $\frac{1}{2}$	72	57 $\frac{3}{4}$	15	16 $\frac{1}{2}$
40-12	54 $\frac{1}{2}$	18 $\frac{3}{4}$	48 $\frac{1}{2}$	72	57 $\frac{3}{4}$	15	16 $\frac{1}{2}$
40-13	54 $\frac{1}{2}$	18 $\frac{3}{4}$	48 $\frac{1}{2}$	72	57 $\frac{3}{4}$	15	16 $\frac{1}{2}$
48-10	60 $\frac{1}{8}$	19 $\frac{7}{8}$	55	84	60	16 $\frac{1}{2}$	17
48-11	60 $\frac{1}{8}$	19 $\frac{7}{8}$	55	84	60	16 $\frac{1}{2}$	17
48-12	60 $\frac{1}{8}$	19 $\frac{7}{8}$	55	84	60	16 $\frac{1}{2}$	17
48-13	60 $\frac{1}{8}$	19 $\frac{7}{8}$	55	85	60	16 $\frac{1}{2}$	17
48-14	60 $\frac{1}{8}$	19 $\frac{7}{8}$	55	85	60	16 $\frac{1}{2}$	17
48-17	60 $\frac{1}{8}$	19 $\frac{7}{8}$	55	85	60	16 $\frac{1}{2}$	17
48-18	60 $\frac{1}{8}$	19 $\frac{7}{8}$	55	85	60	16 $\frac{1}{2}$	17
48-20	60 $\frac{1}{8}$	19 $\frac{7}{8}$	55	85	60	16 $\frac{1}{2}$	17
48-22	60 $\frac{1}{8}$	19 $\frac{7}{8}$	55	85	60	16 $\frac{1}{2}$	17



Bright Idea Sectional Boilers

Measurements



SIDE ELEVATION

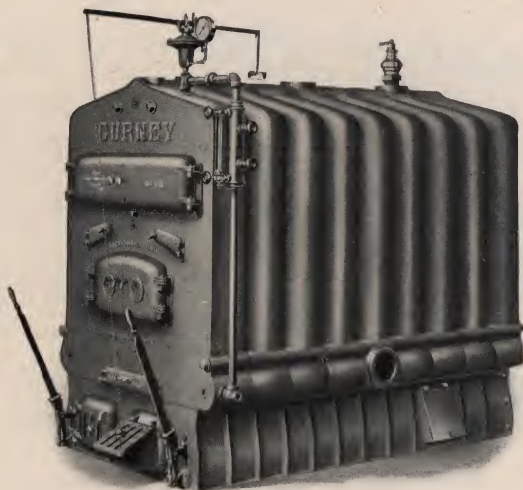
Cat. No. Steam-Water	H	J	K	L	M	N	P	R	S
28- 7	18	10 ³ / ₄	....	....	10 ³ / ₄	12	12	26 ¹ / ₄	39 ¹ / ₄
28- 8	24	10 ³ / ₄	....	....	10 ¹ / ₂	12	12	26 ¹ / ₄	46 ¹ / ₄
28- 9	27 ¹ / ₄	12	....	....	12	12	12	26 ¹ / ₄	51 ³ / ₄
28-10	33	12	16 ¹ / ₂	16 ¹ / ₂	12	12	12	26 ¹ / ₄	57 ¹ / ₂
28-11	38 ¹ / ₄	12 ¹ / ₄	19 ¹ / ₈	19 ¹ / ₈	12 ¹ / ₂	12	12	26 ¹ / ₄	63 ³ / ₄
40- 9	26 ¹ / ₂	13 ¹ / ₂	....	....	13 ¹ / ₂	13 ¹ / ₂	16	27 ³ / ₄	51 ¹ / ₂
40-10	24	17 ¹ / ₂	....	....	17 ¹ / ₂	13 ¹ / ₂	16	27 ³ / ₄	57 ¹ / ₄
40-11	33 ¹ / ₂	16	....	....	16	13 ¹ / ₂	16	27 ³ / ₄	63 ³ / ₄
40-12	36 ¹ / ₂	17 ¹ / ₂	....	....	17 ¹ / ₂	13 ¹ / ₂	16	27 ³ / ₄	69
40-13	42 ¹ / ₂	17 ⁵ / ₈	....	....	17 ⁵ / ₈	13 ¹ / ₂	16	27 ³ / ₄	75
48-10	35 ¹ / ₂	16 ¹ / ₄	....	....	16 ¹ / ₄	7	22	42 ¹ / ₈	64
48-11	35	20 ¹ / ₄	....	....	20 ¹ / ₄	7	22	42 ¹ / ₈	71 ¹ / ₄
48-12	48 ¹ / ₄	17 ³ / ₄	....	....	17 ¹ / ₄	7	22	42 ¹ / ₈	78
48-13	48 ¹ / ₈	20 ¹ / ₄	....	....	20 ¹ / ₄	7	22	42 ¹ / ₈	85
48-14	55 ⁵ / ₈	21	28 ⁷ / ₈	26 ³ / ₄	20 ⁵ / ₈	7	22	42 ¹ / ₈	93
48-17	84	15 ⁷ / ₈	42	42	15 ⁷ / ₈	7	22	42 ¹ / ₈	113
48-18	84 ⁵ / ₈	19 ¹ / ₄	41 ⁵ / ₈	43	19 ¹ / ₄	7	22	42 ¹ / ₈	120
48-20	84	30 ¹ / ₄	42	42	20 ¹ / ₈	7	22	42 ¹ / ₈	133
48-22	84	32	42	42	32	7	22	42 ¹ / ₈	144 ¹ / ₂



900 Series Sectional Boilers

Push Nipple Construction

42 Inch Grate



No. 949-B Steam Boiler

STEAM

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
945-B	3000	\$940	Oath	42 $\frac{1}{2}$ x38	11.21	2-5	2-5
946-B	3750	1090	Obit	42 $\frac{1}{2}$ x47	13.87	2-5	2-5
947-B	4500	1240	Oblate	42 $\frac{1}{2}$ x56	16.53	3-5	3-5
948-B	5250	1390	Ochre	42 $\frac{1}{2}$ x65	19.18	3-5	3-5
949-B	6000	1540	Octavo	42 $\frac{1}{2}$ x74	21.84	3-5	3-5

*For rating conditions see page 4.

Height water line, 59 inches. Height including trimmings, 84 inches. Width including trimmings, 61 inches. For other measurements see pages 24 and 25.



900 Series Sectional Boilers

Push Nipple Construction

42 Inch Grate



No. 949-B Water Boiler

WATER

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
945-B	4950	\$920	Pennate	42 $\frac{1}{2}$ x38	11.21	2-5	2-5
946-B	6200	1070	Perry	42 $\frac{1}{2}$ x47	13.87	2-5	2-5
947-B	7425	1220	Peruke	42 $\frac{1}{2}$ x56	16.53	3-5	3-5
948-B	8650	1370	Pestle	42 $\frac{1}{2}$ x65	19.18	3-5	3-5
949-B	9900	1520	Pewit	42 $\frac{1}{2}$ x74	21.84	4-5	4-5

*For rating conditions see page 4.

Height, 72 $\frac{3}{8}$ inches. Width, 57 inches. For other measurements see pages 24 and 25.



900 Series Sectional Boilers

Push Nipple Construction

30 Inch Grate



No. 935-B Steam Boiler

STEAM

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate. Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
934-B	1300	\$490	Ottoman	30x29	6.04	2-5	2-5
935-B	1650	590	Outward	30x38	7.92	2-5	2-5
936-B	2000	690	Ovate	30x47	9.79	2-5	2-5
937-B	2350	790	Overt	30x56	11.66	3-5	3-5
938-B	2700	870	Oxbane	30x65	13.53	3-5	3-5

*For rating conditions see page 4.

Height water line, 55 inches. Height including trimmings, 77 $\frac{1}{4}$ inches. Width including trimmings, 48 inches. For other measurements see pages 24 and 25.



900 Series Sectional Boilers

Push Nipple Construction

30 Inch Grate



No. 935-B Water Boiler

WATER

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
934-B	2150	\$480	Pace	30x29	6.04	2-5	2-5
935-B	2725	580	Pageant	30x38	7.92	2-5	2-5
936-B	3300	670	Palatial	30x47	9.79	2-5	2-5
937-B	3875	770	Pallas	30x56	11.66	3-5	3-5
938-B	4450	850	Palmette	30x65	13.53	3-5	3-5

*For rating conditions see page 4.

Height, 64 $\frac{1}{4}$ inches. Width, 44 inches. For other measurements see pages 24 and 25.



900 Series Sectional Boilers

Push Nipple Construction

24 Inch Grate



STEAM

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
924-B	1000	\$400	Pictor	24x30	5.00	2-4	2-4
925-B	1250	475	Piello	24x39	6.50	2-4	2-4
926-B	1500	550	Pillum	24x48	8.00	2-4	2-4

*For rating conditions see page 4.

Height water line, 43 inches. Height including trimmings, 67 inches. Width including trimmings, 41 inches. For other measurements see pages 24 and 25.



900 Series Sectional Boilers

Push Nipple Construction

24 Inch Grate



WATER

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
924-B	1650	\$390	Poplar	24x30	5.00	2-4	2-4
925-B	2075	465	Porpit	24x39	6.50	2-4	2-4
926-B	2500	540	Portal	24x48	8.00	2-4	2-4

*For rating conditions see page 4.

Height, 55 $\frac{1}{8}$ inches. Width, 37 inches. For other measurements see pages 24 and 25.



900 Series Sectional Boilers

Push Nipple Construction

17 Inch Grate



No. 915 Steam Boiler

STEAM

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
913	450	\$220	Oakley	17x21	2.48	1-4	2-4
914	675	295	Oboid	17x30	3.54	2-4	2-4
915	900	370	Ocean	17x39	4.60	2-4	2-4
916	1125	445	Odin	17x48	5.67	2-4	2-4

*For rating conditions see page 4.

Height water line, 39½ inches. Height including trimmings, 62 inches. Width including trimmings, 33½ inches. For other measurements see pages 24 and 25.



900 Series Sectional Boilers

Push Nipple Construction

17 Inch Grate



No. 915 Water Boiler

WATER

No.	Rating* Feet	List Price	Telegraphic Code	Size of Grate Inches	Grate Area Sq. Ft.	Outlets Inches	Inlets Inches
913	750	\$210	Olney	17x21	2.48	1-4	2-4
914	1125	285	Oppet	17x30	3.54	2-4	2-4
915	1500	360	Orestes	17x39	4.60	2-4	2-4
916	1875	435	Otter	17x48	5.67	2-4	2-4

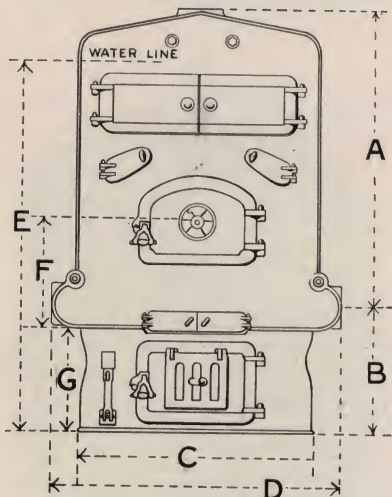
*For rating conditions see page 4.

Height, 50 $\frac{1}{8}$ inches. Width, 30 inches. For other measurements see pages 24 and 25.



900 Series Sectional Boilers

Measurements



FRONT ELEVATION

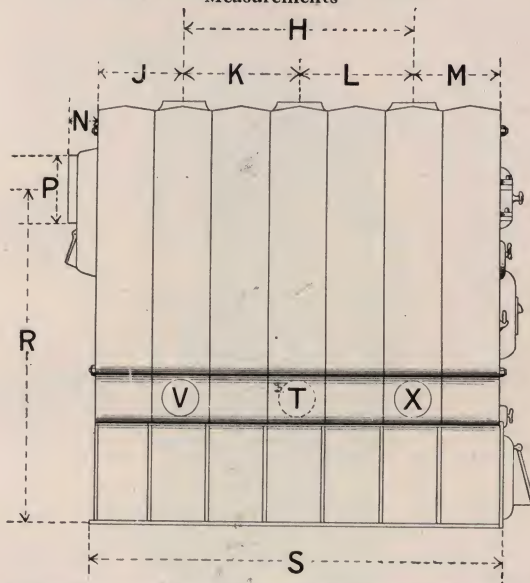
Cat. No. Steam-Water	A	B	C	D	E	F	G
913	35 $\frac{1}{2}$	14 $\frac{5}{8}$	24	30	39 $\frac{1}{2}$	14 $\frac{1}{2}$	11
914	35 $\frac{1}{2}$	14 $\frac{5}{8}$	24	30	39 $\frac{1}{2}$	14 $\frac{1}{2}$	11
915	35 $\frac{1}{2}$	14 $\frac{5}{8}$	24	30	39 $\frac{1}{2}$	14 $\frac{1}{2}$	11
924	38 $\frac{1}{4}$	16 $\frac{7}{8}$	29 $\frac{1}{4}$	37	43	15	14 $\frac{1}{4}$
925	38 $\frac{1}{4}$	16 $\frac{7}{8}$	29 $\frac{1}{4}$	37	43	15	14 $\frac{1}{4}$
926	38 $\frac{1}{4}$	16 $\frac{7}{8}$	29 $\frac{1}{4}$	37	43	15	14 $\frac{1}{4}$
934	47	17 $\frac{1}{4}$	35	44	55	18 $\frac{1}{2}$	14
935	47	17 $\frac{1}{4}$	35	44	55	18 $\frac{1}{2}$	14
936	47	17 $\frac{1}{4}$	35	44	55	18 $\frac{1}{2}$	14
937	47	17 $\frac{1}{4}$	35	44	55	18 $\frac{1}{2}$	14
938	47	17 $\frac{1}{4}$	35	44	55	18 $\frac{1}{2}$	14
945	54 $\frac{1}{2}$	18 $\frac{1}{8}$	47 $\frac{3}{4}$	57	59	20	14
946	54 $\frac{1}{2}$	18 $\frac{1}{8}$	47 $\frac{3}{4}$	57	59	20	14
947	54 $\frac{1}{2}$	18 $\frac{1}{8}$	47 $\frac{3}{4}$	57	59	20	14
948	54 $\frac{1}{2}$	18 $\frac{1}{8}$	47 $\frac{3}{4}$	57	59	20	14
949	54 $\frac{1}{2}$	18 $\frac{1}{8}$	47 $\frac{3}{4}$	57	59	20	14

Above measurements are in inches.



900 Series Sectional Boilers

Measurements



Cat. No. Steam-Water	SIDE ELEVATION										Return Tappings See Note		
	H	J	K	L	M	N	P	R	S		V	T	X
913	...	13	...	...	13	7	9	35	29 1/2		...	4	...
914	8 3/4	13	...	...	13	7	9	35	37 3/4		...	4	4
915	17 3/4	13	...	...	13	7	9	35	46 1/2		...	4	4
924	8 7/8	13	...	...	13	5 3/8	12	39 3/8	37 5/8		...	4	4
925	17 3/4	13	...	...	13	5 3/8	12	39 3/8	46 1/2		...	4	4
926	26 5/8	13	...	...	13	5 3/8	12	39 3/8	55 1/4		...	4	4
934	9	13	...	...	13	5 3/8	12	49	37 5/8		...	5	5
935	18	13	...	...	13	5 3/8	12	49	46 1/2		...	5	5
936	27	13	...	...	13	5 3/8	12	49	55 1/4		...	5	5
937	36	13	18	18	13	5 3/8	12	49	64 1/2		5	5	5
938	45	13	27	18	13	5 3/8	12	49	73		5	5	5
945	17 3/4	13	...	...	13	5 3/4	15	52	46 1/2		...	5	5
946	26 1/2	13	...	...	13	5 3/4	15	52	55 1/4		...	5	5
947	35 1/2	13	17 3/4	17 3/4	13	5 3/4	15	52	64 1/2		5	5	5
948	44 1/4	13	26 1/2	17 3/4	13	5 3/4	15	52	73		5	5	5
949	53	13	26 1/2	26 1/2	13	5 3/4	15	52	82 1/4		5	5	5

Above measurements are in inches.

Note: Return Tappings V and X are on LEFT hand side of boiler, T on RIGHT hand side. 913 has two return tappings on same section, right and left.



400 Series Steam Boilers



No. 445-C Steam Boiler

STEAM

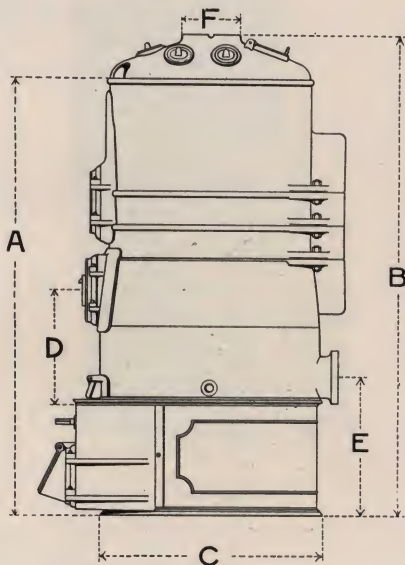
No.	Rating* Feet	List Price	Telegraphic Code	Diam. Grate Inches	Grate Area Sq. Ft.	Height Water Line Inches	Outlets Inches	Inlets Inches
415-C	350	\$170	Bismite	17 $\frac{1}{4}$	1.67	45	2-2	1-2
425-C	450	210	Bland	20 $\frac{1}{4}$	2.24	47	2-2 $\frac{1}{2}$	1-2
435-C	575	250	Bocan	22 $\frac{1}{4}$	2.70	47 $\frac{3}{4}$	2-3	1-2
445-C	675	285	Borage	25 $\frac{1}{4}$	3.48	48 $\frac{1}{2}$	2-3	1-2
455-C	850	350	Bostryx	27 $\frac{1}{4}$	4.05	49 $\frac{1}{4}$	2-3	1-2
465-C	1000	390	Bourgeon	29 $\frac{1}{4}$	4.66	51	2-3 $\frac{1}{2}$	1-2 $\frac{1}{2}$
465 $\frac{1}{2}$ -C	1150	425	Boyar	32 $\frac{1}{4}$	5.67	55	2-3 $\frac{1}{2}$	1-2 $\frac{1}{2}$
475-C	1300	480	Brabant	32 $\frac{1}{4}$	5.67	55	2-4	1-2 $\frac{1}{2}$
485-C	1500	535	Brahma	35 $\frac{1}{4}$	6.78	55 $\frac{1}{4}$	2-4	1-2 $\frac{1}{2}$

*For rating conditions see page 4.



400 Series Steam Boilers

Measurements



STEAM

No.	A	B	C	D	E	F
415-C	51½	56¼	21½	16	17¼	7¼
425-C	53¼	57¾	24½	17	17½	7¼
435-C	54	60	26½	17	17¾	7¾
445-C	54¾	60¾	29	17	18	8
455-C	55½	62	32	17	18	10
465-C	56¾	63½	34½	17½	18⅝	10
465½-C	61	68	37⅞	18	20½	10
475-C	61	68½	37⅞	18	20½	11½
485-C	61½	69¼	41¾	18	21½	11½

Above measurements are in inches.



400 Series Water Boilers



No. 403-C Water Boiler
WATER

No.	Rating* Feet	List Price	Telegraphic Code	Diam. Grate Inches	Sections above Fire Pot	Outlets Inches
400-C	500	\$142	Cabana	17 $\frac{1}{4}$	3	3
401-C	575	158	Cadran	17 $\frac{1}{4}$	4	3
401 $\frac{1}{2}$ -C	700	192	Caira	20 $\frac{1}{4}$	3	3
402-C	800	210	Calaba	20 $\frac{1}{4}$	4	3
403-C	900	225	Cambrian	22 $\frac{1}{4}$	4	4
403 $\frac{1}{2}$ -C	1000	268	Cambeses	25 $\frac{1}{4}$	3	4
404-C	1100	280	Cammock	25 $\frac{1}{4}$	4	4
405-C	1350	328	Canstat	27 $\frac{1}{4}$	4	4
405 $\frac{1}{2}$ -C	1500	355	Cantab	29 $\frac{1}{4}$	3	5
406-C	1600	375	Capable	29 $\frac{1}{4}$	4	5
406 $\frac{1}{2}$ -C	1800	420	Carack	32 $\frac{1}{4}$	4	5
407-C	2000	450	Cardite	32 $\frac{1}{4}$	4	5
408-C	2300	500	Casern	35 $\frac{1}{4}$	4	5
409-C	2500	535	Castellan	35 $\frac{1}{4}$	5	5

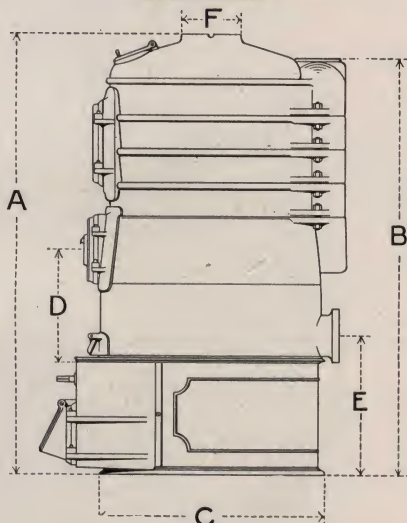
*For rating conditions see page 4.

For Branch Headers, prices and data see page 98.



400 Series Water Boilers

Measurements



WATER

No.	A	B	C	D	E	F
400-C	47	44 $\frac{1}{2}$	21 $\frac{1}{2}$	16	17 $\frac{1}{2}$	7 $\frac{1}{8}$
401-C	50	47 $\frac{3}{4}$	21 $\frac{1}{2}$	16	17 $\frac{1}{2}$	7 $\frac{1}{8}$
401 $\frac{1}{2}$ -C	48 $\frac{3}{4}$	46 $\frac{3}{4}$	24 $\frac{1}{2}$	17	17 $\frac{1}{4}$	7 $\frac{1}{8}$
402-C	52 $\frac{1}{2}$	50 $\frac{1}{2}$	24 $\frac{1}{2}$	17	17 $\frac{1}{4}$	7 $\frac{1}{8}$
403-C	54 $\frac{1}{4}$	50 $\frac{7}{8}$	26 $\frac{1}{2}$	17	17 $\frac{3}{4}$	7 $\frac{3}{4}$
403 $\frac{1}{2}$ -C	52	48 $\frac{1}{2}$	29	17	18	8
404-C	55 $\frac{5}{8}$	52 $\frac{1}{2}$	29	17	18	8
405-C	57 $\frac{1}{4}$	53 $\frac{1}{2}$	32	17	17 $\frac{7}{8}$	10
405 $\frac{1}{2}$ -C	54 $\frac{1}{2}$	50 $\frac{3}{8}$	34 $\frac{1}{2}$	17 $\frac{1}{2}$	18 $\frac{5}{8}$	10
406-C	59 $\frac{1}{2}$	55 $\frac{1}{8}$	34 $\frac{1}{2}$	17 $\frac{1}{2}$	18 $\frac{5}{8}$	10
406 $\frac{1}{2}$ -C	63 $\frac{3}{4}$	59 $\frac{1}{2}$	37 $\frac{7}{8}$	17 $\frac{1}{2}$	20 $\frac{1}{2}$	10
407-C	64 $\frac{3}{4}$	60 $\frac{1}{4}$	37 $\frac{7}{8}$	18	20 $\frac{1}{2}$	11 $\frac{1}{2}$
408-C	65 $\frac{1}{2}$	60 $\frac{3}{4}$	41 $\frac{3}{4}$	18 $\frac{1}{2}$	21 $\frac{1}{4}$	11 $\frac{1}{2}$
409-C	70 $\frac{1}{4}$	65 $\frac{3}{4}$	41 $\frac{3}{4}$	18 $\frac{1}{2}$	21 $\frac{1}{4}$	11 $\frac{1}{2}$

Above measurements are in inches.



Lenox Steam Boilers



No. 20 Lenox Steam Boiler
STEAM

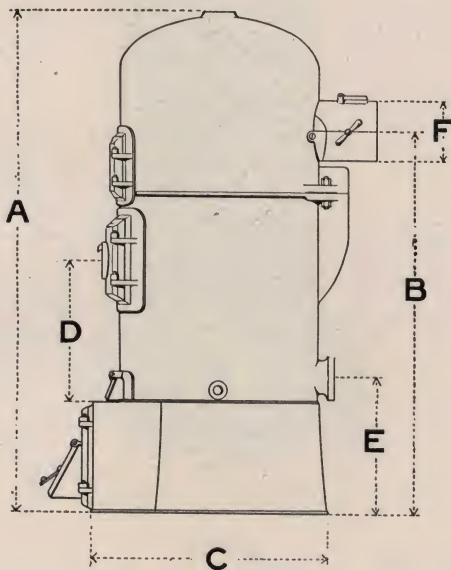
No.	Rating* Feet	List Price	Telegraphic Code	Diam. Grate Inches	Grate Area Sq. Ft.	Height Water Line Inches	Outlets Inches	Inlets Inches
16	300	\$148	Dunker	16½	1.49	46	} 1-2 and 1-2½	1-2½
17	350	165	Dunlin	16½	1.49	50		
18	400	190	Durable	18½	1.87	46½		
19	450	210	Duteous	18½	1.87	51	} 1-2 and 1-3	1-2
20	500	225	Dyad	21½	2.52	47		
22	650	275	Durham	23½	3.01	46½		
24	750	315	Dynam	25½	3.55	47½		

*For rating conditions see page 4.



Lenox Steam Boilers

Measurements



STEAM

No.	A	B	C	D	E	F
16	54 $\frac{5}{8}$	43 $\frac{1}{8}$	24 $\frac{1}{4}$	20	15 $\frac{1}{4}$	6
17	59	47 $\frac{3}{4}$	24 $\frac{1}{4}$	20	15 $\frac{1}{4}$	6
18	57	44 $\frac{1}{2}$	26 $\frac{3}{4}$	20	15	7
19	61 $\frac{1}{4}$	49 $\frac{1}{4}$	26 $\frac{3}{4}$	20	15	7
20	58 $\frac{1}{2}$	47 $\frac{1}{4}$	29 $\frac{5}{8}$	20	15 $\frac{3}{4}$	8
22	57 $\frac{1}{4}$	46 $\frac{3}{8}$	32 $\frac{1}{2}$	20	16 $\frac{1}{2}$	8
24	58 $\frac{3}{4}$	48 $\frac{1}{4}$	35 $\frac{1}{8}$	20	18	9

Above measurements are in inches.



Lenox Water Boilers



No. 19 Lenox Water Boiler

WATER

No.	Rating* Feet	List Price	Telegraphic Code	Diam. Grate Inches	Outlets Inches	Inlets Inches
16	500	\$140	Dauphin	16½	} 1-3	1-3
17	550	155	Defence	16½		
18	650	180	Debut	18½	} 2-2	2-2
19	725	200	Dean	18½		and
20	800	210	Defoil	21½	} 1-3	1-3
21	900	225	Duke	21½	} 2-2	2-2
22	1050	265	Decant	23½		
23	1125	290	Decard	23½	} and	and
24	1250	305	Declaim	25½		
25	1400	340	Define	25½	} 1-4	1-4

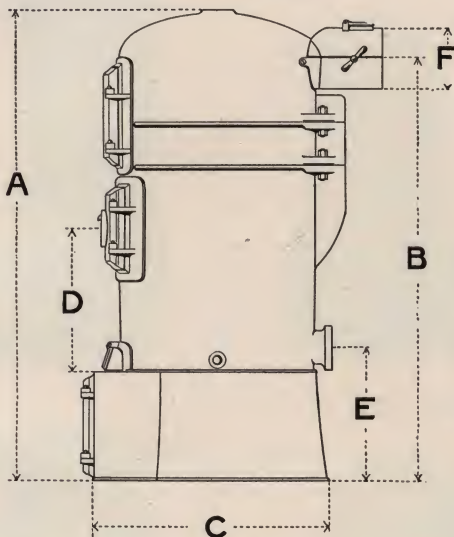
*For rating conditions see page 4.

For Branch Headers, prices and data see page 98.



Lenox Water Boilers

Measurements



WATER

No.	A	B	C	D	E	F
16	48 $\frac{1}{2}$	43 $\frac{1}{2}$	24 $\frac{1}{4}$	20	15 $\frac{1}{4}$	6
17	53 $\frac{1}{8}$	48	24 $\frac{1}{4}$	20	15 $\frac{1}{4}$	6
18	49 $\frac{5}{8}$	44 $\frac{3}{4}$	26 $\frac{3}{4}$	20	15	7
19	54 $\frac{1}{4}$	49	26 $\frac{3}{4}$	20	15	7
20	49 $\frac{7}{8}$	46 $\frac{7}{8}$	29 $\frac{5}{8}$	20	15 $\frac{3}{4}$	8
21	54 $\frac{1}{2}$	51 $\frac{7}{8}$	29 $\frac{5}{8}$	20	15 $\frac{3}{4}$	8
22	50 $\frac{5}{8}$	46 $\frac{1}{2}$	32 $\frac{1}{2}$	20	16 $\frac{1}{2}$	8
23	55 $\frac{5}{8}$	51 $\frac{1}{2}$	32 $\frac{1}{2}$	20	16 $\frac{1}{2}$	8
24	52 $\frac{1}{8}$	48 $\frac{1}{8}$	35 $\frac{1}{8}$	20	18	9
25	56 $\frac{5}{8}$	53 $\frac{1}{8}$	35 $\frac{1}{8}$	20	18	9

Above measurements are in inches.



Water Supply Boilers



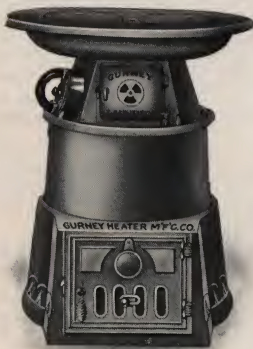
Gurney Gothic No. 12



Gothic (Sectional View)



Gurney Jacket



Gurney Laundry

All Gurney Tank and Laundry Boilers can be furnished with **brass** or **galvanized** water section on special order.

Prices on application.

Gurney Laundry Boilers can be furnished with base plate and feet when so desired at extra cost, \$1.50 net.



Water Supply Boilers

Gothic

No.	†Rated Capacity Gallons	Rating* Feet	List Price	Telegraphic Code	Diam. Grate Inches	Outlets Inches	Inlets Inches
10	200	125	\$50	Santa	10	2	2-1½
12	300	200	65	Spatha	12	2	2-2
14	450	300	85	Specious	14	2½	2-2
16	600	400	110	Spheroid	16	2½	2-2

Laundry

No.	†Rated Capacity Gallons	Rating* Feet	List Price	Telegraphic Code	Diam. Grate Inches	Outlets Inches	Inlets Inches
12	125	80	\$50	Manna	12	1½	1½
14	200	130	60	Matrix	14	1½	1½
16	300	200	80	Maroon	16	1½	1½

Jacket

No.	†Rated Capacity Gallons	Rating* Feet	List Price	Telegraphic Code	Diam. Grate Inches	Outlets Inches	Inlets Inches
10	100	75	\$40	Malvern	10	1½	2-1¼

†WATER HEATING CONDITIONS

The listed ratings of GURNEY water supply and laundry boilers show the approximate sizes of storage tanks which they will supply for ordinary family use.

For apartment houses, hotels, or other purposes where the demands are proportionately heavier, larger capacity should be figured.

On account of the varying conditions of each installation, no definite rule can be formulated, although from actual practice it has been found that for apartment house work an allowance of twenty-five to forty gallons per family is sufficient. For hotels, bath houses, swimming pools, baptisteries, bottle-washing vats and other special purposes, the exact number of gallons to be used per hour must be known before the size of supply boiler required can be safely determined.

See pages 100 and 101 for storage tank sizes and hourly capacities.

Water supply boilers should not be installed unless provision is made for relief when pressure exceeds 30 pounds.

All sizes of Gothic and Laundry Water Supply Boilers can be equipped with butterfly doors for automatic regulation when so ordered.

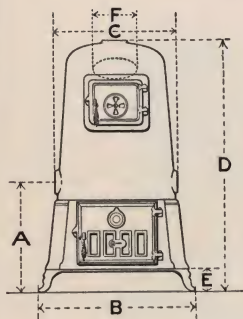
*For rating conditions see page 4.

For other measurements see page 36.



Water Supply Boilers

Measurements



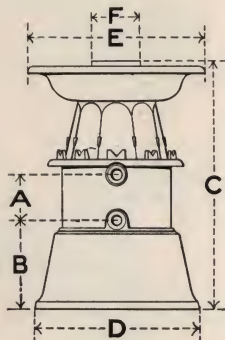
Gurney Gothic

Gurney Gothic

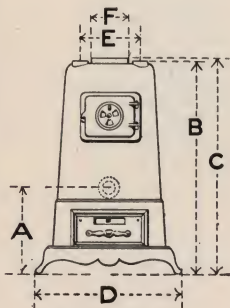
No.	A	B	C	D	E	F
10	14 ⁵ / ₈	18	14 ¹ / ₂	33 ³ / ₄	3 ⁷ / ₈	5 ¹ / ₈
12	16	21 ¹ / ₂	16 ¹ / ₂	35 ¹ / ₂	3 ⁷ / ₈	6
14	17 ¹ / ₄	24	19 ¹ / ₂	39	3 ⁷ / ₈	6
16	18 ¹ / ₂	25 ¹ / ₂	21 ³ / ₈	40 ⁷ / ₈	3 ⁷ / ₈	7

Gurney Laundry

No.	A	B	C	D	E	F
12	6	12 ¹ / ₂	32	22 ³ / ₄	23 ¹ / ₂	6
14	6 ¹ / ₄	12 ¹ / ₂	33 ³ / ₄	23 ¹ / ₄	23 ¹ / ₂	6
16	6 ¹ / ₄	13 ¹ / ₂	36 ¹ / ₄	26 ¹ / ₄	26 ¹ / ₂	6



Gurney Laundry



Gurney Jacket

Gurney Jacket

No.	A	B	C	D	E	F
10	11 ¹ / ₄	27	27 ¹ / ₄	23 ¹ / ₂	7 ⁷ / ₈	4 ⁷ / ₈

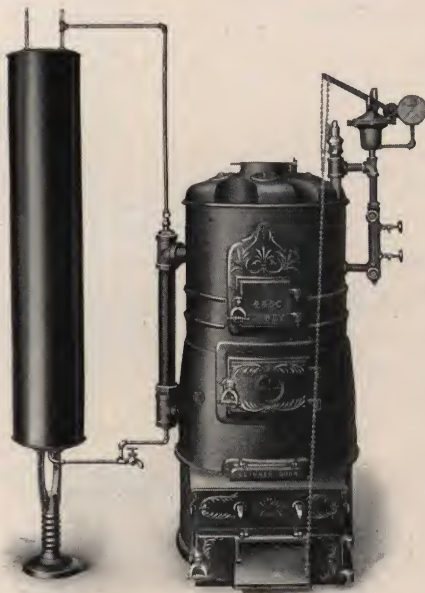
Above measurements are in inches.

"F" or smoke pipe size denotes size of pipe, opening in boiler being oval.



Hot Water Heating Attachment

For "400 Series" and Lenox Steam Boilers



Any size of Gurney 400 Series or Lenox steam boiler can be furnished with equalizing pipe fitted for brass pipe connection for heating a 30, 40 or 50 gallon range boiler. Range boiler can be located in kitchen or in cellar near heater as shown on opposite page. This method of supplying hot water for domestic purposes is much more convenient and practical than the ordinary method of placing a coil in boiler firepot, and insures an ample supply of hot water at all times without detracting in any way from the efficiency of boiler.

Placing a coil in boiler firepot seriously affects the efficiency of any steam boiler, and necessitates using a

larger size of boiler than is actually required. By using the Gurney method with hot water attachment fitted to equalizing pipe the heating power of the fire and boiler heating surface is not lessened in any way, and the ordinary size of boiler will be found of ample capacity for both radiation and range boiler.

We are prepared to furnish all sizes of Gurney 400 Series and Lenox steam boilers fitted with hot water attachment complete and ready for connection to range boiler. Prices (including all necessary brass pipe, fittings, etc., with the exception of connections from hot water attachment to range boiler) on application.

NOTE. — In ordering simply state "boiler to be fitted with hot water attachment," or if fitter prefers to make up his own connections we furnish tees on equalizing pipe in place of elbows without extra cost. When fitter intends to furnish his own connections, state "boiler to be furnished with tees on equalizing pipe."



Radiator Prices

Direct Radiators

The figures at the top of the columns in line with the names of the radiator patterns indicate the heights in which the various types are made. The figures opposite the type of radiator represent the amount of heating surface contained in each section.

List prices subject to change without notice.

Direct Radiators

Height Inches	45	38	32	26	23	22	20	18	16	14
Price per foot	70c.	70c.	76c.	84c.	88c.	90c.	96c.	\$1.00	\$1.04	\$1.08
One-Column Steam and Water	...	3	2½	2	...	...	1½	...	...	..
Two-Column Steam and Water	5	4	3½	2½	2½	...	2	...	...	..
Three-Column Steam and Water	6	5	4½	3¾	...	3	...	2¼	...	..
Five-Column Steam and Water	...	10	...	7	...	...	5	5	4	4

Gurney Wall Radiators

	List Price Per Foot
Extra large section, 12 feet	\$0.76
Nine foot section . . . . .	.76
Seven foot section . . . . .	.76
Five foot section . . . . .	.82

Indirect Radiators

Twenty foot section	\$0.50
Fifteen foot section . . . . .	.50



Radiator Tapping List

All tapings 2 inch and bushed as follows:

One-Pipe Steam—Supply.

Up to 24 feet, inclusive	1 inch
Above 24 up to 60 feet	1¼ inch
Above 60 up to 100 feet	1½ inch
Above 100 feet	2 inch

Two-Pipe Steam—Supply and Return

Up to 48 feet	1 x ¾ inch
Above 48 up to 96 feet	1¼ x 1 inch
Above 96 feet	1½ x 1¼ inch

Water Radiators—Supply and Return

Up to 40 feet	1 x 1 inch
Above 40 up to 72 feet	1¼ x 1¼ inch
Above 72 feet	1½ x 1½ inch

All air-valve tapings are regularly made ⅛ inch.

NOTE.—When radiators are ordered for vapor or vacuum heating specific instructions should be given as to method of tapping.

Wall Radiators are regularly tapped 1½ inches and bushed as per above list. For tapping locations on wall radiators, see pages 55-59.

Special tapings for Gurney Radiators, with the exception of wall radiators, can be furnished when so desired as follows:—

Hot Water Radiators

- Flow and return same end, at bottom.
- Flow and return top and bottom, same end.
- Flow and return top and bottom, opposite ends.

Steam Radiators

Return tapped eccentric on two-pipe work.

In changing the location of, or providing for, additional tapings other than regular, an extra charge will be made.



Single-Column Radiators

For Steam and Water



Width of Section	4½ inches
Width at Legs	5½ inches
Height from Floor to center of Tapping, Supply and Return	4 inches

These Radiators are made in special shapes as follows:—

Circular, for Steam and Water	Page 66
Corner, for Steam and Water	Page 67
Curved, for Steam and Water	Page 67
Concealed Brackets, Steam and Water	Page 60



Single-Column Radiators

For Steam and Water

Number of Sections	Length* $2\frac{1}{2}$ inches per sec.	Heating Surface — Feet			
		38 inch 3 feet per sec.	32 inch $2\frac{1}{2}$ feet per sec.	26 inch 2 feet per sec.	20 inch $1\frac{1}{2}$ feet per sec.
2	5	6	5	4	3
3	$7\frac{1}{2}$	9	$7\frac{1}{2}$	6	$4\frac{1}{2}$
4	10	12	10	8	6
5	$12\frac{1}{2}$	15	$12\frac{1}{2}$	10	$7\frac{1}{2}$
6	15	18	15	12	9
7	$17\frac{1}{2}$	21	$17\frac{1}{2}$	14	$10\frac{1}{2}$
8	20	24	20	16	12
9	$22\frac{1}{2}$	27	$22\frac{1}{2}$	18	$13\frac{1}{2}$
10	25	30	25	20	15
11	$27\frac{1}{2}$	33	$27\frac{1}{2}$	22	$16\frac{1}{2}$
12	30	36	30	24	18
13	$32\frac{1}{2}$	39	$32\frac{1}{2}$	26	$19\frac{1}{2}$
14	35	42	35	28	21
15	$37\frac{1}{2}$	45	$37\frac{1}{2}$	30	$22\frac{1}{2}$
16	40	48	40	32	24
17	$42\frac{1}{2}$	51	$42\frac{1}{2}$	34	$25\frac{1}{2}$
18	45	54	45	36	27
19	$47\frac{1}{2}$	57	$47\frac{1}{2}$	38	$28\frac{1}{2}$
20	50	60	50	40	30
21	$52\frac{1}{2}$	63	$52\frac{1}{2}$	42	$31\frac{1}{2}$
22	55	66	55	44	33
23	$57\frac{1}{2}$	69	$57\frac{1}{2}$	46	$34\frac{1}{2}$
24	60	72	60	48	36
25	$62\frac{1}{2}$	75	$62\frac{1}{2}$	50	$37\frac{1}{2}$
26	65	78	65	52	39
27	$67\frac{1}{2}$	81	$67\frac{1}{2}$	54	$40\frac{1}{2}$
28	70	84	70	56	42
29	$72\frac{1}{2}$	87	$72\frac{1}{2}$	58	$43\frac{1}{2}$
30	75	90	75	60	45

Above radiators are tapped 2 inch and bushed as per list on page 39. Regularly connected at top and bottom with extra heavy malleable push nipples for steam and water. See page 68 for complete measurement data.

*Add $\frac{1}{2}$ inch to length for each bushing.



Two-Column Radiators

For Steam and Water



Width of Section	7¼ inches
Width at Legs	8⅛ inches
Height from Floor to center of Tapping, Supply and Return	4 inches

These Radiators are made in special shapes as follows:—

Circular, Steam and Water	Page 66
Corner, Steam and Water	Page 67
Curved, Steam and Water	Page 67
Concealed Brackets, for Steam and Water	Page 60



Two-Column Radiators

For Steam and Water

No. of Sec.	Length* 2½ in. per sec.	Heating Surface — Feet					
		45 in. 5 ft. per sec.	38 in. 4 ft. per sec.	32 in. 3½ ft. per sec.	26 in. 2½ ft. per sec.	23 in. 2⅓ ft. per sec.	20 in. 2 ft. per sec.
2	5	10	8	6⅔	5⅓	4⅔	4
3	7½	15	12	10	8	7	6
4	10	20	16	13⅓	10⅔	9⅓	8
5	12½	25	20	16⅔	13⅓	11⅔	10
6	15	30	24	20	16	14	12
7	17½	35	28	23⅓	18⅔	16⅓	14
8	20	40	32	26⅔	21⅓	18⅔	16
9	22½	45	36	30	24	21	18
10	25	50	40	33⅓	26⅔	23⅓	20
11	27½	55	44	36⅔	29⅓	25⅔	22
12	30	60	48	40	32	28	24
13	32½	65	52	43⅓	34⅔	30⅓	26
14	35	70	56	46⅔	37⅓	32⅔	28
15	37½	75	60	50	40	35	30
16	40	80	64	53⅓	42⅔	37⅓	32
17	42½	85	68	56⅔	45⅓	39⅔	34
18	45	90	72	60	48	42	36
19	47½	95	76	63⅓	50⅔	44⅓	38
20	50	100	80	66⅔	53⅓	46⅔	40
21	52½	105	84	70	56	49	42
22	55	110	88	73⅓	58⅔	51⅓	44
23	57½	115	92	76⅔	61⅓	53⅔	46
24	60	120	96	80	64	56	48
25	62½	125	100	83⅓	66⅔	58⅓	50
26	65	130	104	86⅔	69⅓	60⅔	52
27	67½	135	108	90	72	63	54
28	70	140	112	93⅓	74⅔	65⅓	56
29	72½	145	116	96⅔	77⅓	67⅔	58
30	75	150	120	100	80	70	60

Above Radiators are tapped 2 inch and bushed as per list on page 39. Regularly connected at top and bottom with extra heavy malleable push nipples for steam and water. See page 68 for complete measurement data.

*Add ½ inch to length for each bushing.



Three-Column Radiators

For Steam and Water



Width of Section	8 $\frac{15}{16}$ inches
Width at Legs	9 $\frac{13}{16}$ inches
Height from Floor to center of Tapping, Supply and Return	4 inches

These Radiators are made in special shapes as follows : —

Circular, Steam and Water	Page 66
Corner, Steam and Water.	Page 67
Curved, Steam and Water	Page 67
Concealed Brackets, for Steam and Water	Page 60



Gurney Three-Column Radiators

For Steam and Water

No. of Sec.	Length* 2½ in. per sec.	Heating Surface — Feet					
		45-in. 6 feet per sec.	38-in. 5 feet per sec.	32-in. 4½ feet per sec.	26-in. 3¾ feet per sec.	22-in. 3 feet per sec.	18-in. 2¼ feet per sec.
2	5	12	10	9	7½	6	4½
3	7½	18	15	13½	11¼	9	6¾
4	10	24	20	18	15	12	9
5	12½	30	25	22½	18¾	15	11¼
6	15	36	30	27	22½	18	13½
7	17½	42	35	31½	26¼	21	15¾
8	20	48	40	36	30	24	18
9	22½	54	45	40½	33¾	27	20¼
10	25	60	50	45	37½	30	22½
11	27½	66	55	49½	41¼	33	24¾
12	30	72	60	54	45	36	27
13	32½	78	65	58½	48¾	39	29¼
14	35	84	70	63	52½	42	31½
15	37½	90	75	67½	56¼	45	33¾
16	40	96	80	72	60	48	36
17	42½	102	85	76½	63¾	51	38¼
18	45	108	90	81	67½	54	40½
19	47½	114	95	85½	71¼	57	42¾
20	50	120	100	90	75	60	45
21	52½	126	105	94½	78¾	63	47¼
22	55	132	110	99	82½	66	49½
23	57½	138	115	103½	86¼	69	51¾
24	60	144	120	108	90	72	54
25	62½	150	125	112½	93¾	75	56¼
26	65	156	130	117	97½	78	58½
27	67½	162	135	121½	101¼	81	60¾
28	70	168	140	126	105	84	63
29	72½	174	145	130½	108¾	87	65¼
30	75	180	150	135	112½	90	67½

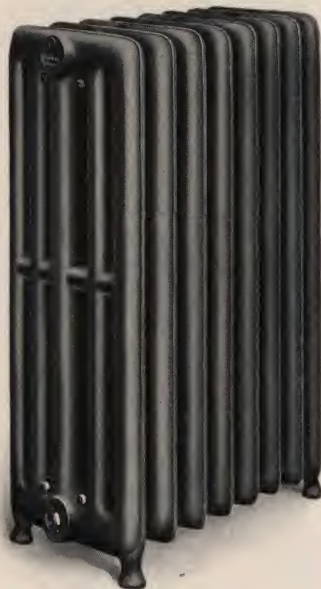
Above Radiators are tapped 2 inch and bushed as per list on page 39. Regularly connected at top and bottom with extra heavy malleable push nipples for steam and water. See page 68 for complete measurement data.

*Add ½ inch to length for each bushing.



Five-Column Radiators

For Steam and Water



Width of Section	12 $\frac{5}{16}$ inches
Width at Legs	12 $\frac{3}{16}$ inches
Height from Floor to center of Tapping, Supply and Return:—	
38-32-26-20-16 inch heights	5 inches
18-14 inch heights	3 inches
Concealed Brackets, for Steam and Water	see Page 60



Five-Column Radiators

For Steam and Water

No. of Sec- tions	Length* 3¼ in. per section	Heating Surface — Feet						
		38 in. 10 ft. per sec.	32 in. 8½ ft. per sec.	26 in. 7 ft. per sec.	20 in. 5 ft. per sec.	18 in. 5 ft. per sec.	16 in. 4 ft. per sec.	14 in. 4 ft. per sec.
2	6½	20	17	14	10	10	8	8
3	9¾	30	25½	21	15	15	12	12
4	13	40	34	28	20	20	16	16
5	16¼	50	42½	35	25	25	20	20
6	19½	60	51	42	30	30	24	24
7	22¾	70	59½	49	35	35	28	28
8	26	80	68	56	40	40	32	32
9	29¼	90	76½	63	45	45	36	36
10	32½	100	85	70	50	50	40	40
11	35¾	110	93½	77	55	55	44	44
12	39	120	102	84	60	60	48	48
13	42¼	130	110½	91	65	65	52	52
14	45½	140	119	98	70	70	56	56
15	48¾	150	127½	105	75	75	60	60
16	52	160	136	112	80	80	64	64
17	55¼	170	144½	119	85	85	68	68
18	58½	180	153	126	90	90	72	72
19	61¾	190	161½	133	95	95	76	76
20	65	200	170	140	100	100	80	80
21	68¼	210	178½	147	105	105	84	84
22	71½	220	187	154	110	110	88	88
23	74¾	230	195½	161	115	115	92	92
24	78	240	204	168	120	120	96	96
25	81¼	250	212½	175	125	125	100	100
26	84½	260	221	182	130	130	104	104
27	87¾	270	229½	189	135	135	108	108
28	91	280	238	196	140	140	112	112
29	94¼	290	246½	203	145	145	116	116
30	97½	300	255	210	150	150	120	120

Above Radiators are tapped 2 inch and bushed as per list on page 39. Regularly connected at top and bottom with extra heavy malleable push nipples for steam and water. See page 68 for complete measurement data.

*Add ½ inch to length for each bushing.



Five-Column Window Radiators

For Steam and Water



End View 18 inch Height

Width of Section	12 $\frac{5}{16}$ inches
Width at Legs	12 $\frac{3}{16}$ inches
Height from Floor to center of Tapping:—	
20 and 16 inch heights	5 inches
18 and 14 inch heights	3 inches
For Curved Window Radiators, Steam and Water	see Page 67
Concealed Brackets, for Steam and Water	see Page 60



Five-Column Window Radiators

For Steam and Water



Number of Sections	Length* 3 1/4 inch per section	Heating Surface — Feet			
		20 inch 5 feet per sec.	18 inch 5 feet per sec.	16 inch 4 feet per sec.	14 inch 4 feet per sec.
2	6 1/2	10	10	8	8
3	9 3/4	15	15	12	12
4	13	20	20	16	16
5	16 1/4	25	25	20	20
6	19 1/2	30	30	24	24
7	22 3/4	35	35	28	28
8	26	40	40	32	32
9	29 1/4	45	45	36	36
10	32 1/2	50	50	40	40

All Gurney Radiators can be built to any number of sections desired. Above Radiators are tapped 2 inch and bushed as per list on page 39. Regularly connected at top and bottom with heavy malleable push nipples for steam and water. See page 68 for complete measurement data.

*Add 1/2 inch to length for each bushing.



Indirect Radiators



15 and 20 Foot School Pin For Steam and Water

These Radiators are made in distinctive patterns for Steam and Water. Steam Radiators have one connection or passageway at bottom. Water Radiators have two connections, one at top and one at bottom.

Connections between sections are made by means of extra heavy 2-inch right and left hand threaded nipples having hexagon nut at center, and sections for steam are stayed by means of a draw rod running through cored openings at opposite end from nipple connections.

Dimensions, Capacities, etc.

Radiators	15-Foot Section	20-Foot Section
Length of Section	35½	36
Height of Section.	10¼	14
Height of Section at connecting point.	11½	15½
Width each Section occupies in stack	4	4

Tapped 2 inch supply and return. Air valve tapping ¾ inch.

Supply or head section is tapped left hand for R and L nipple. Return or drain section is tapped right hand for R and L nipple.

Regular tapings at X and L are tapped RH at supply end, and LH at return end.

Special tapings at A and B are tapped RH.

When sections are bushed, female thread of bushing will be tapped RH.



Indirect Radiators

Directions for Ordering

When ordering Gurney Indirect Radiators simply specify number of inside sections desired, number of supply and return sections desired, and whether for steam or water (15 or 20 foot sections).

Also specify tapping desired (A, B, or regular). Regular tapplings are designated by letter L for steam, and letters X and L for water. (Unless otherwise ordered, supply and return sections will be shipped tapped "Regular".)

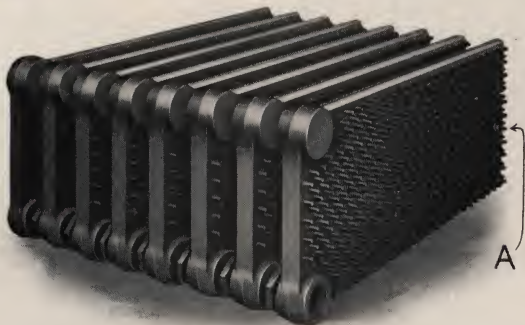
Steam sections are shipped loose. Water sections are also shipped loose, but on special order can be shipped in stacks not exceeding six sections.

When shipped loose, both steam and water sections are provided with sufficient number of R and L hexagon nipples for assembly.

Water sections assembled at plant are subject to an extra charge of one cent net per foot.

Special Features

For convenience in assembly, Gurney Indirect Radiators for Steam are provided with rods which pass through cored openings, as shown on illustration below. This construction gives perfect alignment, and prevents tendency of sections to spread while being assembled.

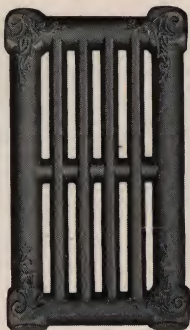


Stack of Eight Sections for Steam showing special rod at "A"

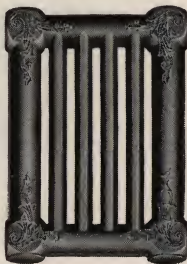


Wall Radiators

For Steam and Water



9-foot Section



7-foot Section



5-foot Section

These Radiators are especially adapted for heating narrow hallways, bathrooms, steam ships or sailing vessels with auxiliary steam equipment, churches, factories and all other installations ordinarily heated with pipe coils.

They are assembled in various ways as illustrated on pages 55 to 59 or any other arrangement desired by the fitter.

Special Pantry Radiators composed of wall sections are shown on page 65

Sizes and Measurements

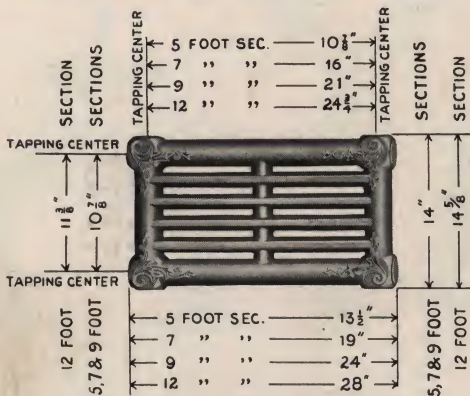
Sizes	Length Inches	Width Inches	Thickness Inches	Thickness with bracket Inches	Heating Surface Feet
5	13½	14	3¼	3¾	5
7	19	14	3¼	3¾	7
9	24	14	3¼	3¾	9
12	28	14⅝	3⅞	4⅜	12



Wall Radiators

For Steam and Water

WALL RADIATOR MEASUREMENTS



Directions for Ordering

For convenience in handling and shipping, unless otherwise ordered, Gurney Wall Radiators will be shipped as follows: When horizontal assembly is desired, 5 foot sections will be assembled in stacks not exceeding 4 sections; 7 foot sections in stacks not exceeding 3 sections; 9 foot sections in stacks not exceeding 2 sections. When vertical assembly is desired 5, 7 and 9 foot sections will be assembled in stacks not exceeding 5 sections.

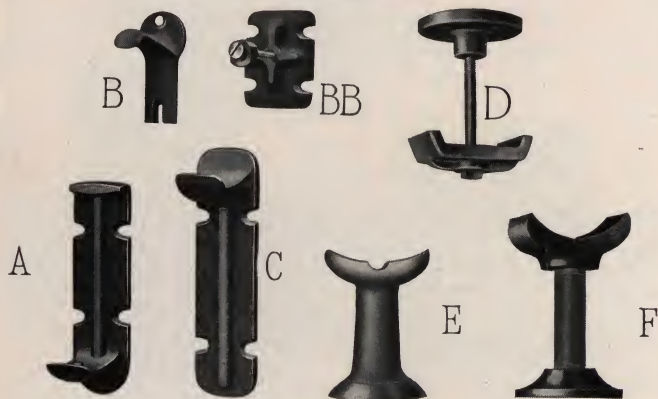
When fitter intends to erect a stack consisting of more sections than above mentioned, or when sections or stacks are to be set in rows or series, we provide a right and left hand threaded nipple having hexagon nut at center to connect stacks or rows.

Gurney Wall Radiation is tapped 1 1/2 inch supply and return and bushed, unless otherwise ordered, as per list on page 39. Sections are connected with 1 1/2 inch right and left hand threaded internal nipples which are provided with two heavy inside lugs to which an ordinary piece of 1-inch round iron flattened at one end can be applied.

Orders for Wall Radiation should refer, if possible, to figure number showing assembly (see following pages) or a sketch showing assembly desired should be sent with order.

When special tappings are desired an extra charge will be made of ten cents net for each tapping.

Wall Radiator Brackets



Brackets B and BB

Screwed to wall, baseboard or wainscoting, and intended to be used as a guide or to hold in position radiator supported by bracket A or C. The BB bracket is slotted for four and the B bracket for two wood screws, not supplied by us. With each BB bracket we furnish one one-quarter inch stove bolt and button.

Bracket A

Screwed to wall, baseboard or wainscoting, and supports all sizes of wall radiators.

Bracket C

Screwed to wall, baseboard or wainscoting, and supports all sizes of wall radiators. Each section requires for its proper support one A or C bracket at bottom and one B or BB bracket or long screw with button at top of radiator.

Bracket D

Made of cast flange, $3\frac{1}{2}$ inches diameter and screwed to ceiling joists by four screws — not furnished by us. The bolt furnished gives a distance of 4 inches to 5 inches from bottom of Radiator to ceiling. Other length bolts can be furnished on special order.

Bracket E

Wall Radiator Foot, used to support a wall section from the floor.

Bracket F

Adjustable Pedestal, consisting of top casting or support, and round plate for floor. Both castings tapped for one-inch pipe. Pipe not furnished by us unless ordered specially.

We can furnish also baseboard brackets and adjustable wall brackets with or without wrought iron bearing plates.



Wall Radiators

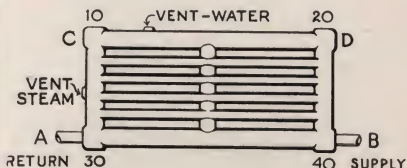


Fig. 2. Water and One and Two-pipe Steam

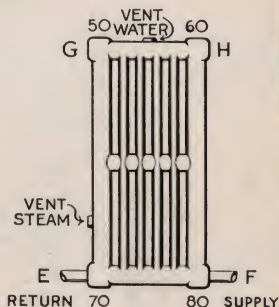


Fig. 1. Water and One and Two-pipe Steam

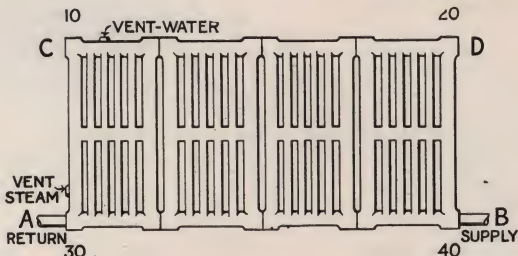


Fig. 13. Water and One and Two-pipe Steam

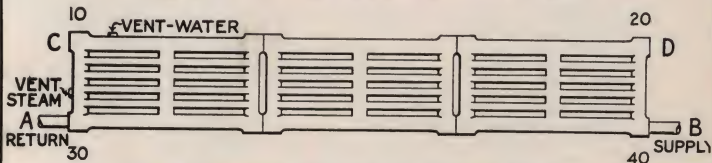


Fig. 14. Water and One and Two-pipe Steam

NOTE — The regular tapplings of Gurney Wall Radiators are indicated by letters A, B, C, D, E, F, G and H as shown. Nos. 20, 40, 60, 70, 80 and 90 indicate special tapplings which can be furnished when desired at an extra cost of 10 cents net per tapping. Radiators are tapped $1\frac{1}{2}$ inches right hand for supply and $1\frac{1}{2}$ inches left hand for return, and unless otherwise ordered will be bushed as per list on page 39.

Wall Radiators

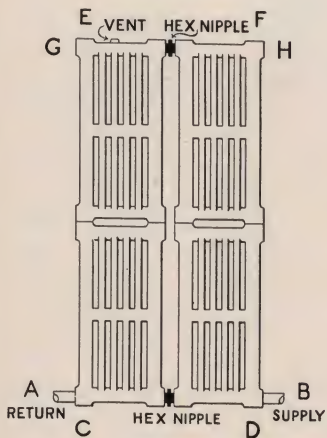


Fig. 5. Four Sections in Two Tiers — Water

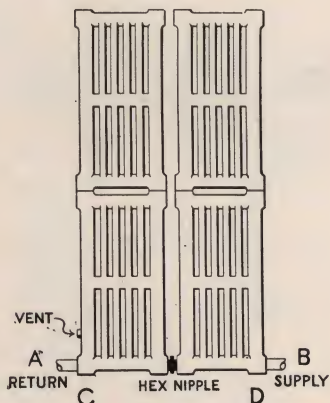


Fig. 6. Four Sections in Two Tiers — One and Two-pipe Steam.

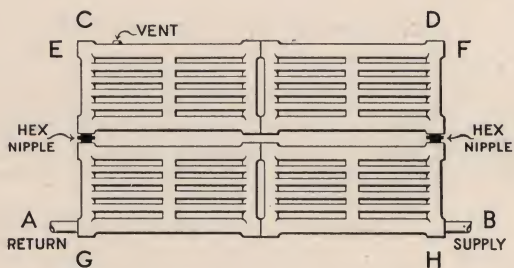


Fig. 9 1/2. Four Sections in Two Tiers — Water.



Wall Radiators

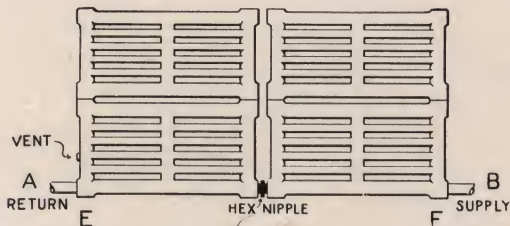


Fig. 10. Four Sections in Two Tiers — One and Two-pipe Steam.

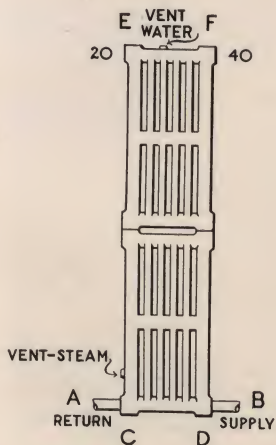


Fig. 7. Two Sections in Two Tiers—
Water and One and Two-pipe
Steam

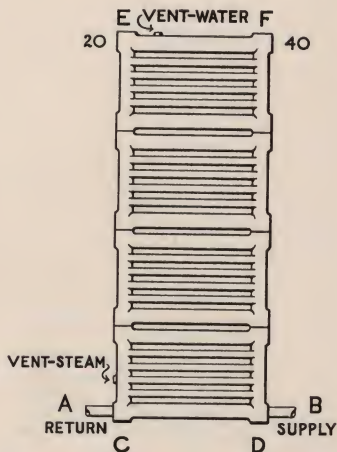


Fig. 9. Four Sections in Four Tiers—
Water and One and Two-pipe
Steam.

Wall Radiators

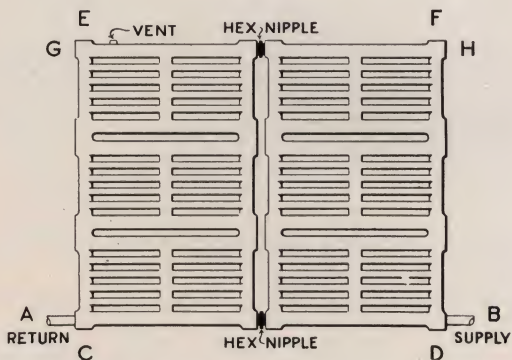


Fig. 11. Six Sections in Three Tiers — Water

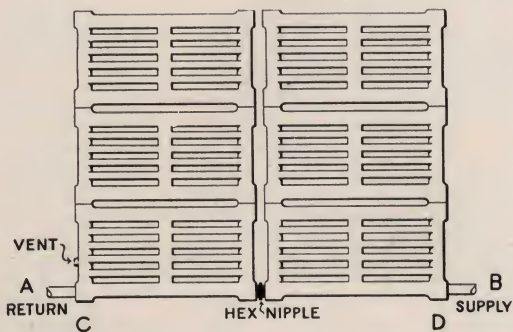


Fig. 12. Six Sections in Three Tiers — One and Two-pipe Steam



Wall Radiators

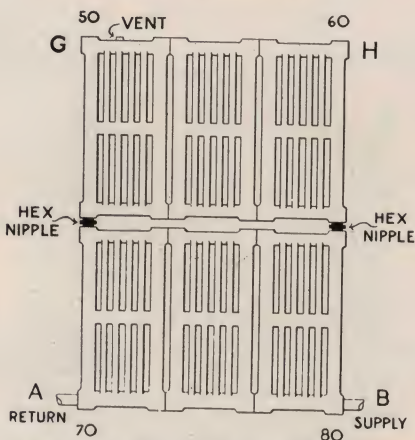


Fig. 8. Six Sections in Two Tiers — Water.

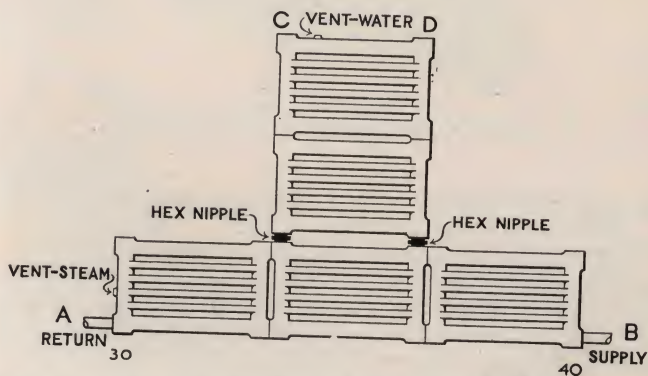
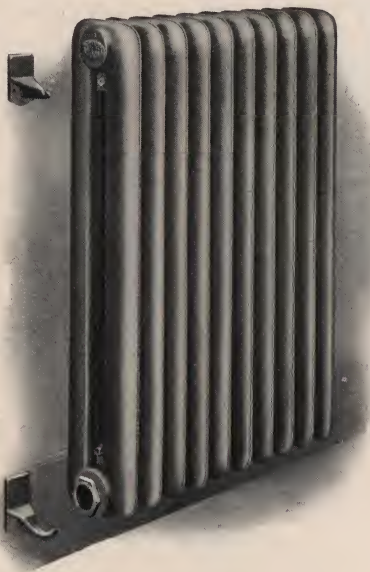


Fig. 15. Three and Two Sections with Three Tiers in Center — Water and One and Two-pipe Steam.



Direct Radiators on Brackets

For Steam and Water



Two-Column Radiator with Concealed Brackets

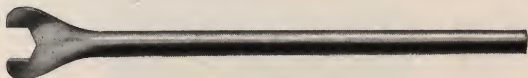
Concealed Brackets for One, Two, Three and Five Column Steam and Water Radiators.

Illustration shows type of brackets furnished, also Radiator supported on brackets.

In ordering this type of Radiator simply state "Radiator without legs to be used in connection with concealed brackets." Unless brackets are specified on order Radiators will be shipped without same. The same data regarding heating surface, connections, and tapping applying on Radiators with legs applies to Radiators without legs.

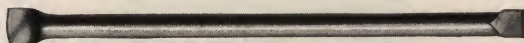


Radiator and Lock-Nut Nipple Wrenches



Indirect Radiator Wrench

These wrought iron wrenches are made especially for assembling Gurney Indirect Radiators or other types of Indirect Radiators, connected with 2-inch right and left-hand threaded nipples having hexagon nut at center in $1\frac{1}{2}$ -inch size.



Wall Radiator Wrench

For assembling Gurney Wall Radiators this wrench will be found a most convenient tool. Wrenches are made of wrought iron and the head fits snugly into the lugs cast on inside of right and left-hand threaded internal nipples.



Lock Nut Nipple Wrench

These wrenches are the best and most convenient tool for making up locknut nipples on Gurney Bright Idea Boilers. Wrenches are made of wrought iron in two sizes; No. 1 for assembling $2\frac{1}{2}$ -inch locknuts on 28-inch grate, and No. 2 for assembling 3-inch locknuts on 40-inch and 48-inch grates. When ordering give number of boiler for which they are intended or specify by number.



Portable Ventilating Box Bases



Front View of 12 section Gurney Box Base as applied to a 12 section Gurney Radiator

These bases with corresponding front and back plates are regularly made in eleven sizes for Gurney One-Column, Two-Column and Three-Column Radiators as listed on pages 40 to 45, and fit under regular stock Gurney Radiators without special fitting of any kind. We also furnish Wall Boxes as shown on page 64.

To explain the application of these bases: A No. 5 Box Base can be used under radiators having 5 sections or any odd number of sections larger. (This also applies to 7, 9, 11, 13 and 15-section Box Bases.) A No. 6 Box Base can be used under radiators having 6 sections or any even number of sections larger. (This also applies to 8, 10, 12, and 14-section Box Bases.)

When ordering specify the serial number of Base as shown on opposite page in place of stating number of middle sections Base should fit under.



Portable Ventilating Box Bases

NOTE. — Measurements for back opening and bottom opening Bases are given in inches. The data for Base with back opening is the outside measure of iron flanges. The data on bottom opening Base represents the largest size openings which can be cut in floor for air inlet under Base.

Single-Column					Two-Column				
No.	Back Opening		Bottom Opening		No.	Back Opening		Bottom Opening	
	Wide	Long	Wide	Long		Wide	Long	Wide	Long
A-5	$2\frac{13}{32}$	$5\frac{21}{32}$	3	5	B-5	$2\frac{13}{16}$	$5\frac{9}{16}$	$3\frac{1}{2}$	5
A-6	$2\frac{13}{32}$	$7\frac{25}{32}$	3	$7\frac{1}{2}$	B-6	$2\frac{13}{16}$	$7\frac{9}{16}$	$3\frac{1}{2}$	$7\frac{1}{2}$
A-7	$2\frac{13}{32}$	$10\frac{9}{32}$	3	10	B-7	$2\frac{13}{16}$	$10\frac{1}{32}$	$3\frac{1}{2}$	10
A-8	$2\frac{13}{32}$	$12\frac{25}{32}$	3	$12\frac{1}{2}$	B-8	$2\frac{13}{16}$	$12\frac{19}{32}$	$3\frac{1}{2}$	$12\frac{1}{2}$
A-9	$2\frac{13}{32}$	$15\frac{11}{32}$	3	15	B-9	$2\frac{13}{16}$	$15\frac{1}{32}$	$3\frac{1}{2}$	15
A-10	$2\frac{13}{32}$	$17\frac{21}{32}$	3	$17\frac{1}{2}$	B-10	$2\frac{13}{16}$	$17\frac{21}{32}$	$3\frac{1}{2}$	$17\frac{1}{2}$
A-11	$2\frac{13}{32}$	$20\frac{5}{32}$	3	20	B-11	$2\frac{13}{16}$	$20\frac{5}{32}$	$3\frac{1}{2}$	20
A-12	$2\frac{13}{32}$	$22\frac{19}{32}$	3	$22\frac{1}{2}$	B-12	$2\frac{13}{16}$	$22\frac{19}{32}$	$3\frac{1}{2}$	$22\frac{1}{2}$
A-13	$2\frac{13}{32}$	$25\frac{3}{32}$	3	25	B-13	$2\frac{13}{16}$	$25\frac{3}{32}$	$3\frac{1}{2}$	25
A-14	$2\frac{13}{32}$	$27\frac{19}{32}$	3	$27\frac{1}{2}$	B-14	$2\frac{13}{16}$	$27\frac{19}{32}$	$3\frac{1}{2}$	$27\frac{1}{2}$
A-15	$2\frac{13}{32}$	$30\frac{1}{16}$	3	30	B-15	$2\frac{13}{16}$	$30\frac{1}{16}$	$3\frac{1}{2}$	30

Three-Column

No.	Back Opening		Bottom Opening	
	Wide	Long	Wide	Long
C-5	$2\frac{13}{16}$	$5\frac{9}{16}$	$3\frac{1}{2}$	5
C-6	$2\frac{13}{16}$	$7\frac{9}{16}$	$3\frac{1}{2}$	$7\frac{1}{2}$
C-7	$2\frac{13}{16}$	$10\frac{1}{32}$	$3\frac{1}{2}$	10
C-8	$2\frac{13}{16}$	$12\frac{19}{32}$	$3\frac{1}{2}$	$12\frac{1}{2}$
C-9	$2\frac{13}{16}$	$15\frac{1}{32}$	$3\frac{1}{2}$	15
C-10	$2\frac{13}{16}$	$17\frac{21}{32}$	$3\frac{1}{2}$	$17\frac{1}{2}$
C-11	$2\frac{13}{16}$	$20\frac{5}{32}$	$3\frac{1}{2}$	20
C-12	$2\frac{13}{16}$	$22\frac{19}{32}$	$3\frac{1}{2}$	$22\frac{1}{2}$
C-13	$2\frac{13}{16}$	$25\frac{3}{32}$	$3\frac{1}{2}$	25
C-14	$2\frac{13}{16}$	$27\frac{19}{32}$	$3\frac{1}{2}$	$27\frac{1}{2}$
C-15	$2\frac{13}{16}$	$30\frac{1}{16}$	$3\frac{1}{2}$	30



Portable Ventilating Box Bases



The above illustration gives a good idea of Box Base as regularly supplied with Gurney Box Base Radiators. Bases can be furnished with opening and damper in the floor in addition to regular inlet collar in the rear and dampers as shown. For list of sizes, etc., see page 63.

Wall Boxes



These are well built and their angle slats and brass wire screen make them storm and insect proof. Outside measurement of Wall Box is 5 by 17½ inches. Outside measurement of flange, 4¾ by 17 inches. Regularly furnished in cast iron, but can also be supplied in brass and bronze.



Pantry Radiators

For Steam or Water



This combination radiator and plate-warmer is made up of 7-foot sections Gurney wall radiation — for steam or water.

It is designed especially for private residence pantries, but in extended construction can also be used for hotel or restaurant work. Radiators are shipped made up.

Number Sections	Height Inches	Heating Surface	List price, including Legs
1	9	7 feet	\$16.00
2	19	15 feet	30.00
3	29	23 feet	44.00
4	39	31 feet	58.00
5	49	39 feet	72.00

Width, 14 inches; Length, 19 inches; Distance, floor to center of tapping on bottom section, $5\frac{7}{8}$ inches.



Circular Radiators

Circular Radiators are made in patterns and heights as listed on pages 40 to 45 and are tapped as per list on page 39.

Circular Radiators are furnished in two pieces, forming two separate and distinct Radiators, which are bolted together, can be readily taken apart, placed around a column and again bolted together. These Radiators are tapped as follows: for one-pipe work, two tapings for valves; for two-pipe work and for water, four tapings for valves, — two supply in front and two returns in back.

When Circular Radiators are not intended to be placed around a column or post, they can, when specially ordered, be furnished all in one piece with two connections for valves for TWO-PIPE WORK ONLY.

Circular Radiators for one-pipe steam work and for water are furnished in TWO PIECES ONLY.

In order to give more space for adjusting valves the sections of all Circular Radiators having supply and return openings are separated by an intermediate section without tapping boss.

In ordering Circular Radiators intended to be placed around a column be sure and state the exact diameter at base of column, as well as number of sections, height and pattern desired.

In ordering Circular Radiators not intended to be placed around a column or post simply state number of sections, height and pattern desired.

Orders for Circular Radiators are not subject to cancellation under any conditions, and no credit will be allowed for Circular Radiators returned.



Curved Radiators

Curved Radiators are made in patterns and heights as listed on pages 40 to 45 and 48, 49.

In ordering Curved Radiators be sure and specify the exact radius of the base board within which the Radiator is to be placed, or, to avoid any possibility of error, we prefer that a heavy paper or wooden template showing exact size and radius of Radiator accompany each order.

NOTE. — Always advise on which end of the curve (right or left hand, when facing Radiator) the supply is to enter (this applies to steam radiators only).

Angle Radiators

Angle Radiators are made in patterns and heights as listed on pages 40 to 49. In ordering angle radiators it is necessary that we know the exact angle to which Radiator must conform, so be sure and give the following dimensions, or, if possible send template showing exact size of radiator and angles to which it must conform:—

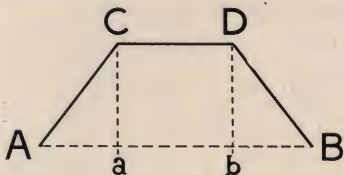


Fig. 1

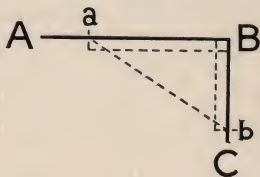


Fig. 2

When ordering a radiator to fit an angle bay window, as Fig. 1, give us dimensions, Aa, ab, bB, aC, bD. Line AB can be taken from any two points on the sides AC and DB, provided it is parallel with side CD.

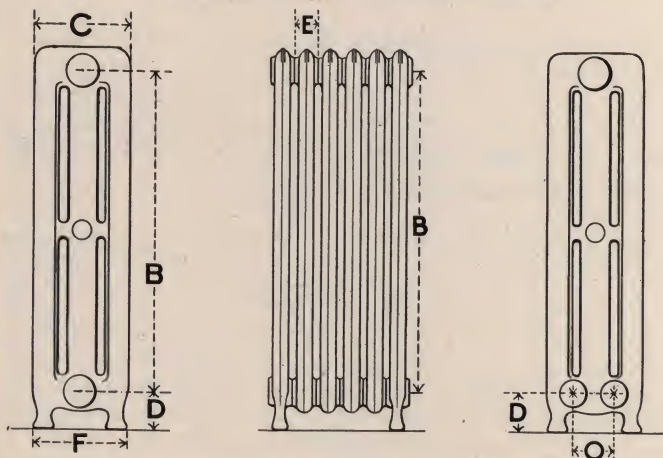
When ordering an angle radiator to fit an angle, as Fig. 2, give us dimensions of sides aB, Bb and ab.

Measurements aB and Bb are obtained by laying off equal distances on lines AB and BC with vertex of angle B as a center.

NOTE. — When ordering steam radiators to be made up as angle radiators be sure and state which end of the angle (right or left hand as you face Radiator) the supply is to enter.



Direct Radiator Measurements



Measurements are in inches. See above outlines

Pattern and Catalog Height		B	C	D	E	F	O
1 Column	38	$31\frac{1}{8}$	$41\frac{7}{32}$	4	$2\frac{1}{2}$	$5\frac{1}{2}$	Not furnished
	32	$25\frac{11}{32}$	$41\frac{7}{32}$	4	$2\frac{1}{2}$	$5\frac{1}{2}$	
	26	$19\frac{17}{32}$	$41\frac{7}{32}$	4	$2\frac{1}{2}$	$5\frac{1}{2}$	
	20	$13\frac{11}{16}$	$41\frac{7}{32}$	4	$2\frac{1}{2}$	$5\frac{1}{2}$	
2 Column	45	$38\frac{3}{8}$	$71\frac{1}{4}$	4	$2\frac{1}{2}$	$8\frac{1}{8}$	$3\frac{3}{16}$
	38	$31\frac{31}{64}$	$71\frac{1}{4}$	4	$2\frac{1}{2}$	$8\frac{1}{8}$	$3\frac{3}{16}$
	32	$25\frac{9}{16}$	$71\frac{1}{4}$	4	$2\frac{1}{2}$	$8\frac{1}{8}$	$3\frac{3}{16}$
	26	$19\frac{9}{16}$	$71\frac{1}{4}$	4	$2\frac{1}{2}$	$8\frac{1}{8}$	$3\frac{3}{16}$
	23	$16\frac{9}{16}$	$71\frac{1}{4}$	4	$2\frac{1}{2}$	$8\frac{1}{8}$	$3\frac{3}{16}$
	20	$13\frac{9}{16}$	$71\frac{1}{4}$	4	$2\frac{1}{2}$	$8\frac{1}{8}$	$3\frac{3}{16}$
3 Column	45	$38\frac{3}{8}$	$81\frac{5}{16}$	4	$2\frac{1}{2}$	$9\frac{13}{16}$	$4\frac{1}{4}$
	38	$31\frac{31}{64}$	$81\frac{5}{16}$	4	$2\frac{1}{2}$	$9\frac{13}{16}$	$4\frac{1}{4}$
	32	$25\frac{9}{16}$	$81\frac{5}{16}$	4	$2\frac{1}{2}$	$9\frac{13}{16}$	$4\frac{1}{4}$
	26	$19\frac{9}{16}$	$81\frac{5}{16}$	4	$2\frac{1}{2}$	$9\frac{13}{16}$	$4\frac{1}{4}$
	22	$15\frac{17}{32}$	$81\frac{5}{16}$	4	$2\frac{1}{2}$	$9\frac{13}{16}$	$4\frac{1}{4}$
	18	$11\frac{5}{8}$	$81\frac{5}{16}$	4	$2\frac{1}{2}$	$9\frac{13}{16}$	$4\frac{1}{4}$
5 Column	38	$31\frac{1}{32}$	$12\frac{5}{16}$	5	$3\frac{1}{4}$	$12\frac{3}{16}$	$4\frac{5}{8}$
	32	$25\frac{1}{16}$	$12\frac{5}{16}$	5	$3\frac{1}{4}$	$12\frac{3}{16}$	$4\frac{5}{8}$
	26	$19\frac{31}{64}$	$12\frac{5}{16}$	5	$3\frac{1}{4}$	$12\frac{3}{16}$	$4\frac{5}{8}$
	20	$13\frac{15}{32}$	$12\frac{5}{16}$	5	$3\frac{1}{4}$	$12\frac{3}{16}$	$4\frac{5}{8}$
	18	$13\frac{15}{32}$	$12\frac{5}{16}$	3	$3\frac{1}{4}$	$12\frac{3}{4}$	$4\frac{5}{8}$
	16	$9\frac{37}{64}$	$12\frac{5}{16}$	5	$3\frac{1}{4}$	$12\frac{1}{4}$	$4\frac{5}{8}$
	14	$9\frac{37}{64}$	$12\frac{5}{16}$	3	$3\frac{1}{4}$	12	$4\frac{5}{8}$



Directions for Ordering Radiators

1. State number radiators of each pattern and height desired.
2. Give number of sections of each pattern and height desired.
3. State whether 1, 2, 3, or 5 column and give height desired.
4. State whether steam or hot water radiators are required.
5. Give style or pattern of radiator, and state whether plain or ornamental.
6. Give specific tapping directions: i. e., if for steam, state whether for one pipe or two pipe system; if for water, state whether regular tapping (flow and return opposite ends at bottom) or special tapplings as listed on page 39 are desired. Unless otherwise specified, all radiators will be shipped with tapplings as per list on page 39.
7. In ordering wall radiators refer to page 53.
8. In ordering circular, curved, or corner radiators refer to pages 66 and 67.
9. Give exact routing for shipment and state when wanted.
10. When possible give name of job on order.
11. In all correspondence referring to orders, give date and order number on "Acknowledgment of Order."
12. To facilitate handling of orders arrange them as follows (quantity of these forms will be mailed on application), and be sure to sign your orders.

Gurney Heater Mfg. Company

Order No. 426 Dated July 15, 1919

Charge to John Jones
188 Franklin St., Boston, Mass.

Ship to Same

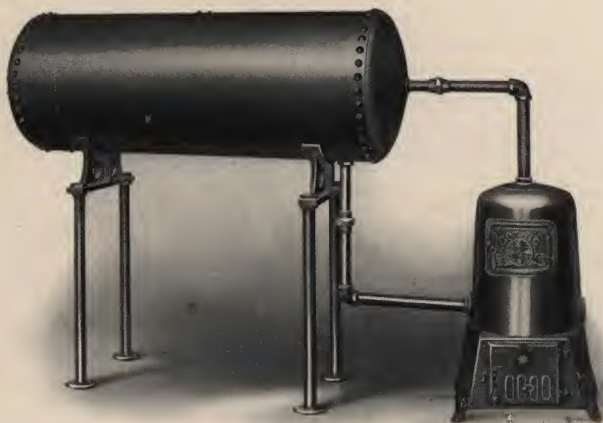
Via B. and A. Frt. When Ship Rush

Number of Radiators	Number Sections	Column	Height	Kind Steam or Water	Style	Tapped
2	9	3	38	Steam	Plain	1 1/4 1 pipe
4	8	2	38	Water	Orn.	1 x 1 inch

Purchaser John Jones



Steel Storage Tanks



Gurney Gothic Water Supply Boiler connected to 24 in. x 60 in. black steel storage tank

Data

These tanks are made of the best quality open-hearth hard rolled steel plate, and are properly tested for the purpose for which they are to be used.

All tanks, 20, 24 and 30 inches in diameter up to 12 feet in length, listed on page 73, can be furnished galvanized. Prices on galvanized tanks furnished on application.

Orders for tanks with coils or made to specifications are not subject to cancellation.

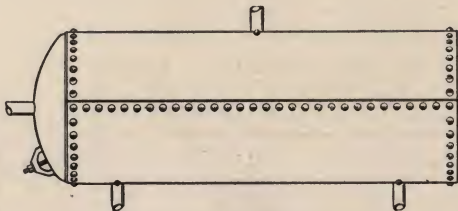
When tanks are to be subjected to sudden or unusual pressure, it is necessary that the system be equipped with Water Pressure Reducing Valve and Relief Valve.

Prices of special tanks furnished on application.



Steel Storage Tanks

With or Without Coil



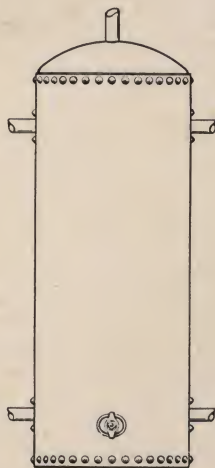
Tappings as Furnished with Horizontal Tanks

In ordering, state whether tanks are to be used vertically or horizontally.

Unless otherwise ordered, tanks will be shipped with tappings located as shown on sketches. If other tappings are desired, a sketch showing tappings desired should be sent with order. For data on coils see next page.

All list prices of storage tanks listed on page 73 include regular tappings consisting of not more than five 2-inch openings.

Supports or legs for vertical tanks can be furnished. Prices upon application.



Tappings as Furnished with Vertical Tanks



Coils for Storage Tanks

We can, on special order, equip Tanks with standard four-branch return bend coils at extra charge, as per list below.

Prices are per lineal foot and include necessary return bends and locknuts, and provide for placing coil in Tank.

List Prices

Coil made of	1 in.	1¼ in.	1½ in.	2 in.
Black iron pipe	\$1.55	\$1.70	\$1.80	\$1.95
Galvanized iron pipe	1.70	1.80	1.95	2.10
Brass (iron pipe size)	5.20	6.50	7.75	9.00
Copper (iron pipe size)	5.50	6.75	8.00	9.35

Extra charge for standard four branch coils is based on number of lineal feet for various lengths of tanks as shown in following list. Lengths given include return bends.

Tank — 48 inches long, 14 lineal feet.

Tank — 60 inches long, 18 lineal feet.

Tank — 72 inches long, 22 lineal feet.

Tank — 84 inches long, 26 lineal feet.

Tank — 96 inches long, 30 lineal feet.

Tank — 108 inches long, 34 lineal feet.

Tank — 120 inches long, 38 lineal feet.

We recommend 1 inch Pipe on Tanks of 20 and 22 inches diameter.

We recommend 1¼ inch Pipe on Tanks of 24 and 30 inches diameter.

We recommend 1½ inch Pipe on Tanks of 36 inches diameter.

We recommend 2 inch Pipe on Tanks of 42 and 48 inches diameter.

It is advisable to have a man-hole in head of all tanks containing coils. This should be remembered when figuring. Quotations will, upon application, be promptly furnished on styles and sizes of coils other than above.

Approximate weights per foot: 1 inch, 4 pounds; 1¼ inches, 4½ pounds; 1½ inches, 5 pounds; 2 inches, 7 pounds.



Steel Storage Tanks

Standard Working Pressure, 75 pounds.
Extra Heavy Working Pressure, 100 pounds.

Size Inches	Cap. Gal.	Weight Lbs.	List Price	Size Inches	Cap. Gal.	Weight Lbs.	List Price
20x 48	66	280	\$100.00	36x 48	210	730	\$213.00
20x 60	82	320	110.00	36x 60	250	840	229.00
20x 72	98	360	125.00	36x 72	300	950	265.00
				36x 84	350	1060	301.00
				36x 96	400	1170	327.00
				36x108	450	1280	356.00
24x 48	94	360	124.00	36x120	500	1390	385.00
24x 60	120	410	136.00	36x144*	600	1610	443.00
24x 72	140	460	147.00	36x168*	700	1830	503.00
24x 84	168	500	167.00	36x192*	800	2040	560.00
24x 96	190	543	187.00	36x216*	900	2260	625.00
24x120	235	647	230.00				
				42x 72	430	1140	336.00
				42x 84	500	1270	367.00
30x 30	86	425	122.00	42x 96	575	1400	402.00
30x 36	105	455	133.00	42x120	720	1660	466.00
30x 48	139	490	157.00	42x144	865	1940	530.00
30x 60	175	525	171.00	42x168	1000	2200	595.00
30x 72	209	590	185.00				
30x 84	245	660	203.00	48x 96*	750	1600	510.00
30x 96	281	735	227.00	48x120*	940	1900	582.00
30x108	314	800	245.00	48x144*	1130	2200	654.00
30x120	347	865	286.00	48x168*	1300	2500	726.00
30x122	373	945	330.00	48x192*	1500	2800	798.00
30x144	418	1025	366.00	48x216*	1700	3100	870.00

Hand Holes, list price, \$8.00. Manholes, in head, list price, \$30.00; in shell, list price, \$45.00. Extra tappings, list price, 2 or 2 1/2 inches, \$8.00.

*Furnished extra heavy only, for 100 pounds working pressure.



Galvanized Expansion Tanks



12 x 20 (10-Gallon) Tank

These Tanks are made of refined galvanized steel tested to 100 pounds pressure, and are good for full rated capacity. Tanks are riveted and calked.

Tapping — Tanks are tapped top and bottom for 1-inch overflow and expansion pipe, and on side for feed pipe.

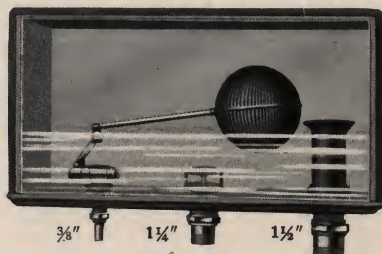
Water gauge tappings are 12 inches between centers.

List Prices for Tanks and Water Gauges

Size Inches	Capacity Gallons	Feet Radiation tank will supply	List Price of tank	List Price of gauge and fittings
10 x 20	8	250	\$7.50	\$1.75
12 x 20	10	300	8.00	1.75
12 x 24	12	450	8.50	1.75
12 x 30	15	500	9.00	1.75
12 x 36	18	650	9.50	1.75
14 x 30	20	700	12.50	1.75
14 x 36	24	850	13.00	1.75
16 x 30	26	950	14.00	1.75
16 x 36	32	1300	15.00	1.75
16 x 48	42	2000	16.50	1.75
18 x 60	66	3000	31.00	1.75
20 x 60	82	5000	37.00	1.75
22 x 60	100	6000	51.00	1.75



Automatic Expansion Tanks



For the trade preferring an automatic expansion tank we are prepared to furnish Gurney automatic tanks as shown above.

These tanks are made of hardwood, lined with heavy sheet copper and are finished in the best possible manner.

Tanks are furnished with square or round corners as the owner may desire and can also be supplied in genuine cherry, walnut or quarter sawed oak at extra cost of \$1.25 net each.

Inside measurements of tank are: length, 20 inches; width, 9 inches; depth, 10 inches. Weight, crated, 40 pounds.

List Prices for Tanks

Including expansion and overflow couplings with iron size pipe thread.

Style	List Price
Square corners, plain oak	\$8.50
Round corners, plain oak	9.00

Roughing-in Measurements

2 ⁷/₈ inches from outside rear edge of tank to center of either overflow or expansion.

5 ⁵/₈ inches from center of overflow to right side edge of tank.

5 ⁵/₈ inches from center of overflow to center of expansion.

3 ³/₈ inches from center of supply to back edge of tank.

4 ⁵/₈ inches from center of supply to left side edge of tank.

Q. O. Water Radiator Valves

Rough Body — Plated All Over



This improved type of Hot Water Valve has the Bonnet and Body of the valve cast in one piece, thus eliminating one threaded joint.

The Disc and Stem are also cast in one piece and, being extra heavy, eliminate all danger of the disc breaking off the stem.

The Disc affords an unobstructed water-way; it is in contact with the valve body at the top and bottom only, which minimizes the contact surface between disc and body, thus reducing tendency to stick.

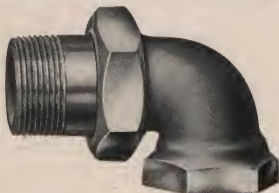
The Disc and inside surface of body are heavily nickel plated, which eliminates corrosion.

The Lugs which act as stops for the disc are extra heavy and will not shear off.

The Valve is of the quick operating type, being opened or closed by a one-half turn of the handle; the highest grade of steam metal is used.

Price List with Union (Threads R. H.)

Size, Inches	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2
List Price . . .	\$2.40	\$2.85	\$3.65	\$5.05	\$7.10	\$10.85



Union Elbows for Water Radiators

Rough Body — Plated All Over

Price List (Threads R. H.)

Size, Inches	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2
List Price . . .	\$1.75	\$2.00	\$2.50	\$3.20	\$4.00	\$7.00

Q. O. Water Radiator Valves, Union Elbow and Screw Stem Steam Angle Radiator Valves with composition disc can also be supplied in the following finishes: Rough body, finished trimmings; Rough body, plated trimmings, and Finished body, plated all over. Factory shipments only.



Steam Radiator Valves

Rough Body — Plated All Over

Screw Stem

With Male Union Threads, R. H.



These valves are made of the highest grade metal and are characterized by their excellent design and finish.

The openings are full area, and valves are equipped with a follower in the stuffing-box gland — a feature which is usually found in the highest-priced valves only.

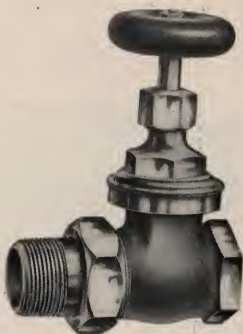
Price List for Valve with Union and Composition Disc

Size, Inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
List Price . . .	\$3.15	\$3.80	\$4.75	\$6.40	\$8.10	\$13.10

W. W. Brass Gate Valves

With Union, Rough Body
Plated All Over

Size, Inches	List Price
$\frac{1}{2}$	\$3.65
$\frac{3}{4}$	4.25
1	5.20
$1\frac{1}{4}$	6.60
$1\frac{1}{2}$	9.00
2	12.80





Straightway Q. O. Water Radiator Valves

Rough Body — Plated All Over



Price List, with Union (Threads R. H.)

Size, Inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
List Price . . .	\$2.85	\$3.65	\$5.05	\$7.10	\$10.85

These valves can also be supplied in finishes as given on page 76.



Draw-off Cocks

Size, Inches	List Price
$\frac{1}{2}$	\$0.70
$\frac{3}{4}$	0.70
1	0.80



Screw Stem Steam Corner Valves

Offset Pattern

Rough Body — Plated All Over



Right-Hand Valve



Left-Hand Valve

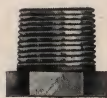
Price List, with Union and Composition Disc

Size, Inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
List Price	\$4.20	\$5.25	\$7.05	\$8.95

Fusible Plugs

U. S. and Massachusetts Standard

Size Inches	Short Pattern	Long Pattern
$\frac{1}{2}$	\$.60	\$1.20
$\frac{3}{4}$	.75	1.50
1	1.00	2.00
$1\frac{1}{4}$	1.50	3.00



Short Pattern



Long Pattern

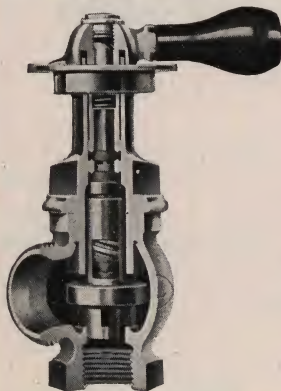
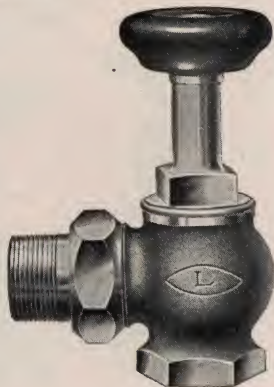


Packless Radiator Valves

"GURNEY" FOR STEAM
Rough Body, Plated All Over

The Gurney Packless Radiator Valve has a number of decided advantages over any other article of its class.

Frictionless in operation, air, steam and water tight, and devoid of all objectionable packing features, these valves are without question the best valves ever offered. Valves are quick opening (three-quarters of a turn is sufficient to open or close), and for finish and correct principles of design are absolutely unsurpassed.



The Gurney Graduated Packless Valve is similar in construction to the regular packless valve shown above, except that it has a lever handle, an indicator plate graduated into eight sections, and means for special adjustment by which each valve can be accurately set for a wide range of sizes of radiators.

LIST PRICES WITH UNION

	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Wood Wheel						
Angle	\$3.15	\$3.80	\$4.75	\$6.40	\$8.10	\$13.10
Graduated						
Angle, with shells . . .	4.00	4.80	5.85	7.65	9.50	15.00
Angle, without shells . .	3.75	4.50	5.50	7.25	9.00	14.30

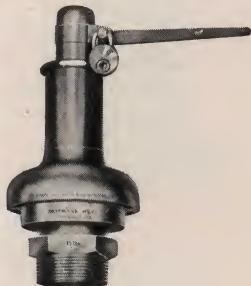
On special order can also be furnished with lock and shield. Plated keys, list 50 cents each extra.



Police Pop Safety Valves

American Pattern

Accepted and approved by the Board of Boiler Rules of the State of Massachusetts, October 3, 1907. Complies with the latest Revised Laws.



List Prices

Size Inches	Grate Area Square Feet	List Price
2	8.0	\$30
2½	12.5	50
3	17.75	65
3½	24.0	80
4	31.5	100

Gurney Pop Safety Valves

These are strictly high grade. Valves have an extra heavy iron hexagon base, to which the ordinary type of wrench can be applied without danger of straining or crushing valve seat.



List Prices

Size, Inches	1	1¼	1½	2	2½	3	3½
List Price . .	\$6.00	\$6.75	\$8.25	\$11.25	\$26.00	\$37.50	\$50.00



Automatic Air Valves



Russell Perfect

The principle of construction in this well-known valve insures the expulsion of all air from radiators or coils. A sealed phosphor bronze float within the shell is partially filled, under vacuum, with a sensitive fluid which vaporizes at 151 degrees Fahrenheit and closes the valve by expanding the top and bottom float corrugations. In the event of radiator filling with water the buoyancy of float will close the valve.

The construction of the base makes the use of a syphon unnecessary, as the two openings insure the return of condensation to the radiator: steam enters the upper passage and equalizes pressure in valve with pressure in radiator.

The adjusting screw is independent of the high grade cylinder packing and is held in place by a packing gland: this construction insures absolute freedom from leaks.

Valves are made to wear: there are no perishable or intricate parts to wear or get out of order.

A durable and reliable valve at a reasonable price.

List price \$1.15



Automatic Air Valves



Gurney Pattern

These valves are well made, can be readily adjusted, and give excellent results for the varying ranges of temperature and pressure of low-pressure heating.

List Price, angle, each	\$0.75
List Price, straight shank, each	1.00

Compression Air Valves



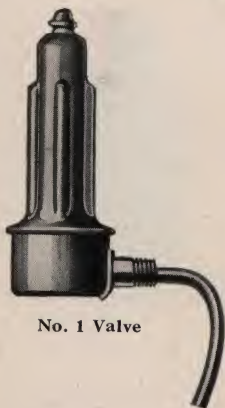
Wood Wheel, Nickel Plated	List \$3.00 per doz.
Key air valves	List \$3.00 per doz.
Keys for key air valves	5 cents each, net

Hoffman Venting Valves

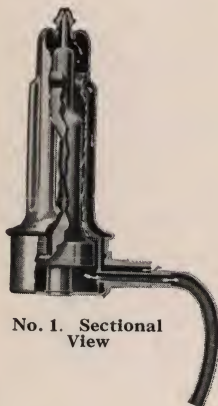
Automatic Non-Adjustable

The Hoffman Siphon Air Valve as shown on this page is a perfect non-adjustable automatic venting device.

The sectional cut shown below shows the mechanical construction.



No. 1 Valve



No. 1. Sectional View

The float is a sealed chamber having a flexible bottom and this chamber contains a volatile or heat-sensitive fluid which vaporizes at 190° Fahrenheit; this generates a pressure in the chamber and thus deflects the flexible bottom raising the float against its seat and closing the valve port.

Temperatures of 190° or over close the valve instantly, but at temperatures below 190° the volatile fluid condenses and the valve opens. This fact means that the heated air which collects in a hot Radiator is as freely vented as cold air and this sensitiveness of the valve in distinguishing between live steam and heated air means the expulsion of ALL air in the Radiator when pressure is maintained at the Boiler.

Another function of the float is to care for any sudden charge of water in the Radiator. The moment water reaches the valve the float closes tightly. The moment water recedes from the valve the siphon discharges the water back into the Radiator and the valve recommences venting.

The arrows on sectional cut show direction of water flow through the siphon and air flow into the valve. The entering air cannot pass through the water in float chamber and must pass through channels provided.

The outlets from these channels are above the water line in the float chamber so that even if valve opens before being dry the air passes out of the valve perfectly dry without the slightest spit.



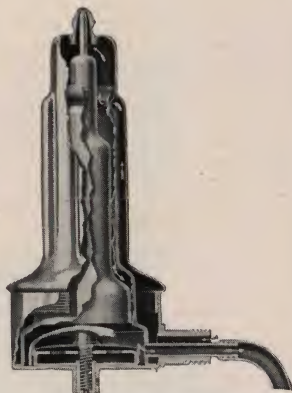
Hoffman Venting Valves

Automatic Non-Adjustable

The Hoffman Siphon Air and Vacuum Valve is the "Last Word" in non-adjustable air venting valves with vacuum feature.

When a pressure of six ounces or more reaches the valve its functions are in every way the same as the No. 1 Siphon Valve until the vacuum feature is reached.

Since it has taken fuel to obtain the pressure necessary to expel air from Radiator it is logical to keep it out after this is done. The Hoffman No. 2 Valve freely permits air to be vented at any pressure above six ounces automatically closing against the emission of steam or water and then in addition automatically closes against the ingress of air through the valve into the Radiator when pressure drops and steam condenses.



No. 2. Sectional View

List Prices

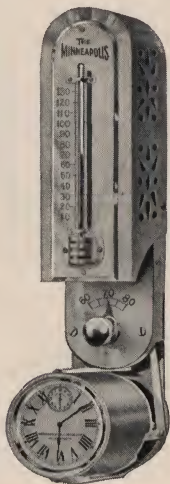
No. 1	Siphon Automatic Air Valve	\$1.90
No. 2	Hoffman Air and Vacuum Valve	4.50
No. 3	Hoffman Air Line Valve	2.50
No. 4	Hoffman Junior Quick Vent Air Valve	2.80
No. 5	Hoffman Quick Vent "Float" Air Valve	8.00
No. 6	Hoffman Quick Vent "Float" Air and Vacuum Valve	12.00
No. 8	Hoffman 1/2-inch Return Line Valve	6.00
No. 9	Hoffman 3/4-inch Return Line Valve	8.00

All Hoffman Venting Valves are made entirely of metal. They are absolutely automatic in performance of their functions.



Heat Regulators

Minneapolis



Thermostat with time attachment



Thermostat with 8-day clock attachment

The adoption of the well-known and time-tried Minneapolis Heat Regulator by particular heating contractors throughout the country is one of the best proofs of its merits, and its successful operation in thousands of homes where only the best is tolerated is proof positive. The thermostat, or mechanical thermometer, as above shown controls the operation of the entire Regulator mechanism, which, besides the thermostat, consists of a motor (placed in cellar) and two cells of open circuit battery, also placed in cellar.

The thermostat is made with time attachment, without time attachment, and with 8-day time attachment; the last named is a strictly high-grade timepiece, which can be easily removed from thermostat and used anywhere in the house when desired.

The operation of the heat regulator is as follows: when the metallic coil at top of thermostat is exposed to a change of temperature it expands or contracts, which imparts a motion to coil arm which in turn closes the electric circuit by forming a contact with one of the



Heat Regulators

Minneapolis — *Continued*

contact posts at lower end of thermostat. As the circuit is closed, current flows through the motor magnets releasing spring coil brake.

When coil is released it expands and forces the driving shaft of motor to make a half revolution. The chains which are connected to boiler ash pit lift check door, and smoke-pipe cold air check are attached to driving shaft by means of extension arms, and when driving shaft revolves the arms swing in a wide arc and by tightening or releasing chains open and close drafts.

When driving shaft makes one-half revolution the brake falls automatically and prevents further expansion of spring until change of temperature again operates thermostat.



MOTOR

Showing winding index, chain arms, and dust-proof cover

All working parts of motor are of pressed steel and brass; the bearings are lathe-turned, running in brass bushings, and the whole mechanism is as finely adjusted and fitted as the very best clock made.

List Prices — Minneapolis Regulator

No. 40	Regulator (without time attachment)	. . . . .	\$40.00
No. 47	Regulator with time attachment	. . . . .	47.00
No. 55	Regulator with 8-day duplex clock	. . . . .	55.00
No. 60	Regulator and 8-day clock time attachment	. . . . .	60.00

NOTE. — Prices for heat regulators include all wiring, chains, pulleys, bracket etc., necessary for complete installation.

Also furnished with electric motor. For List Price add \$20.00 to above prices.



Bronze Powder



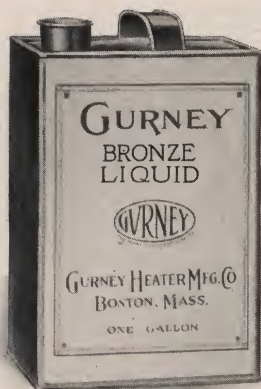
After many years of experience in handling bronze powders we can offer to the trade a grade of bronze powder exactly suited to the bronzing of Gurney Radiators. The bronze is of the highest quality, and when properly applied lusters like loosened gold. Its exceptional brilliancy and durability should immediately appeal to the heating contractor who desires to leave his job looking "right."

Gurney Bronze Powder is put up in screw top cans containing one pound, and in the following colors: Pale Gold, Aluminum, Copper, Brown and Dark Green.

NOTE. — One pound of bronze powder (except aluminum) will ordinarily cover about 200 feet of radiation; one pound of aluminum will cover about 300 feet of radiation.



Bronzing Liquid



To secure the best results Gurney Bronze Powder should be used in connection with Gurney Bronzing Liquid. The combination makes a finish which adds greatly to the popularity of steam and hot water heating apparatus among home lovers, and is frequently a most effective advertisement for the heating contractor.

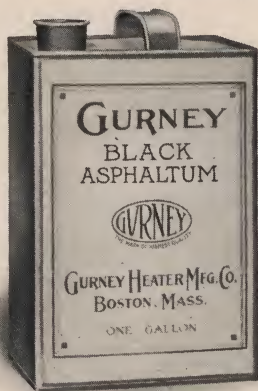
Gurney Bronzing Liquid is put up in one-gallon cans, requires no thinning, and is ready for instant use.

Directions for Using

Keep the can closed tight when not in use. Do not get any bronze in liquid can, as the smallest particle will turn the liquid green. Always use a clean mixing pot and brush, and be sure that all dried-up bronze is removed before mixing afresh. One quart of liquid is required for each pound of bronze powder, except aluminum, which requires one gallon for each pound of powder.



Black Asphaltum



For the painting of boilers and cellar mains we offer an extremely high grade of Black Asphaltum put up in one-gallon cans.

This is a first-class covering in every respect, and is superior in every way to the old-fashioned mixture of white lead, graphite and turpentine.

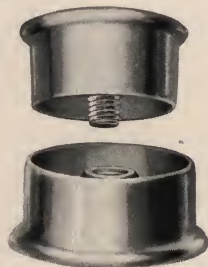
List Price

Per gallon \$1.70

Adjustable Foot-Ups

Gurney adjustable foot rests insure accurate adjustment of radiator in place of usual slant when boards are used or floors are out of level.

They are cheaper than boards, and are guaranteed to make the work "look right" regardless of local conditions. Made of cast iron without finish. To finish, paint with same bronze as radiator.



* Dimensions and List Prices

Number	Height Open	Height Closed	List Price
1	1 $\frac{1}{4}$ inch	$\frac{7}{8}$ inch	\$0.20
2	1 $\frac{3}{4}$ inch	1 $\frac{1}{4}$ inch	.25
3	2 $\frac{1}{4}$ inch	1 $\frac{3}{8}$ inch	.30



Radiator Brushes



These brushes are specially designed for use on radiators, the shape being such that they will readily pass between the sections, thus cleaning surfaces which could not be reached otherwise. Brushes are genuine Chinese pig bristles; handles are made of twisted wire.

List Price, each \$0.80

Fitch-Hair Brushes



We are prepared to furnish best grade Fitch-Hair Brushes in all sizes.

List Price, per inch \$0.40

Gurney Boiler Brushes



Round B. I.
List Price, \$1.50



New Style B. I.
List Price, \$1.50



Flat Type
List Price, \$1.00

These brushes are supplied with Gurney Boilers, as follows: Round B. I., with 900 series; New style B. I., with Bright Idea Sectional. When ordering, state size and style of Boiler for which they are intended.



Pipe Covering



Air Cell

For high or low pressure steam and hot water pipes Asbestos Air-Cell Pipe Covering is absolutely dependable.

It is a perfect insulator, light in weight, yet as strong and durable as any situation could demand. It will not disintegrate from the action of heat, and complete satisfaction is guaranteed.

Made in 3-foot lengths; $\frac{1}{2}$, $\frac{3}{4}$ and 1-inch thickness.

Wool Felt

This covering is composed of a special wool felt, an interlining of pure asbestos felt, heavy canvas outside and finished with brass lacquered metal bands.

Not only is this covering a highly efficient insulating material, but it presents a handsome appearance, very suitable especially for covering pipes exposed to view.

Made in 3-foot lengths; $\frac{1}{2}$, $\frac{3}{4}$ and 1-inch thickness.

List Prices

Inside Diam. of Pipe, Inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Price, Lineal Foot	\$0.22	\$0.24	\$0.27	\$0.30	\$0.33	\$0.36	\$0.40	\$0.45	\$0.50	\$0.60
Inside Diam. of Pipe, Inches	$4\frac{1}{2}$	5	6	7	8	9	10	12		
Price, Lineal Foot	\$0.65	\$0.70	\$0.80	\$1.00	\$1.10	\$1.20	\$1.30	\$1.85		



Asbestos Cement

Gurney Asbestos Cement should be applied to a warm surface and in thin coats. To make a nice looking and durable finish mix the last coat half and half with Portland Cement, and when dry apply a coat of white paint.

Amount of cement required to cover Gurney Boilers:

No. of Boiler	Pounds Required			No. of Boiler	Pounds Required		
	1 1/4" Thick	1 1/2" Thick	2" Thick		1 1/4" Thick	1 1/2" Thick	2" Thick
Bright Idea				400 Series			
28- 7	325	400	500	400C	100	100	150
28- 8	375	450	600	401C-415C	100	125	175
28- 9	425	500	675	401 1/2 C	125	150	200
28-10	475	575	750	402C-425C	150	175	225
28-11	525	625	825	403C-435C	175	200	225
40- 9	500	600	825	403 1/2 C	200	225	250
40-10	550	675	900	404C-445C	200	225	275
40-11	625	750	1000	405C-455C	225	250	300
40-12	700	825	1100	405 1/2 C	250	300	400
40-13	750	900	1200	406C-465C	275	350	450
48-10	725	875	1175	406 1/2 C-465 1/2 C	300	375	500
48-11	825	975	1300	407C-475C	300	375	500
48-12	900	1075	1425	408C-485C	350	425	550
48-13	975	1175	1575	409C	375	450	600
48-14	1050	1275	1700	Lenox			
48-17	1275	1525	2050	16	100	125	175
48-18	1350	1625	2175	17	125	150	200
48-20	1500	1800	2375	18	125	150	200
48-22	1650	1975	2625	19	150	175	225
Down-Draft				20	150	175	225
1050	425	500	675	21	150	200	250
1051	475	575	750	22	150	200	250
1052	575	675	900	23	175	225	275
1053	625	750	1000	24	175	225	275
1054	675	800	1075	25	175	225	275
1055	775	925	1225	900 Series			
1056	825	975	1300	913	125	150	200
1280	650	775	1025	914	175	200	275
1281	725	875	1150	915	225	250	350
1282	850	1025	1375	916	250	300	425
1283	950	1125	1525				
1284	1025	1225	1650	924	200	225	300
1285	1175	1400	1875	925	225	275	375
1286	1250	1500	2000	926	275	325	450
1287	1400	1675	2225				
1288	1475	1775	2350	934	250	300	400
1289	1600	1925	2550	935	300	350	475
1290	1700	2025	2700	936	350	425	575
1291	1825	2200	2950	937	400	500	650
1292	1975	2350	3150	938	475	575	750
Gothic				945	375	450	600
10	30	40	50	946	425	525	700
12	40	50	65	947	500	600	800
14	55	70	90	948	575	675	900
16	60	75	100	949	650	775	1000

On Boilers not listed estimate 6 pounds to the square foot, 1 1/4 inches thick.

List Prices 100 Lb. Bag

No. 1 Grade, \$4.00

No. 2 Grade, \$3.00

No. 4 Grade, \$2.50

Combination Floor and Ceiling Plates



No. 10 B. and C.

The adoption of this plate by thousands of particular heating contractors is the best proof of its merits. Plates are made of two thicknesses of cold rolled steel, heavily coppered and nickel plated. Plates are hinged and can be put on after the work is finished, and can be used for either floor or ceiling.

The Warco Floor and Ceiling Plate is one of the strongest and neatest now on the market. Made of cold rolled steel, coppered before nickel plating, halves securely riveted by a concealed hinge. Can be opened or closed on pipe without effort.



No. 10 Warco



No. 9 B. and C.

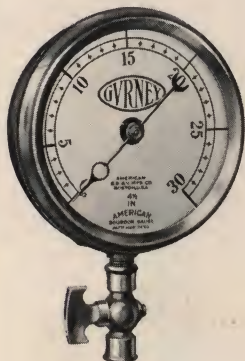
For the Trade preferring a light-weight plate we offer the well-known B and C snaplock steel plate. These plates fit snugly and can be cut with shears to accommodate irregular installations.

Price List

Size Inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
No. 10 B. and C.	.27	.28	.32	.35	.38	.45	.65	.80
No. 10 Warco	.27	.28	.32	.35	.38	.45	.65	.80
No. 9 B. and C.	.27	.28	.32	.35	.38	.45	.65	.80



Steam Gauges



Size $4\frac{1}{2}$ inches, iron case without back flange; silvered dial; with cock. Registering 30 pounds pressure. Threaded $\frac{1}{4}$ -inch pipe connection.

These gauges are all equipped with hair-spring tension, so the movement is rendered very sensitive at the lowest pressures under which cast iron boilers are usually operated — viz., 2 pounds or less.

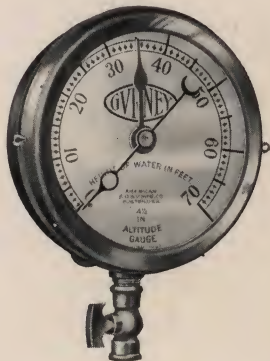
List Price, with cock . . . \$5.00

Altitude Gauges

These gauges are extremely well made and will register with accuracy height of water in the system.

OPERATION. — When water is at proper level in expansion tank remove cover and set stationary hand at pressure indicated by working hand; when working hand falls back towards dial pin more water should be added. Size $4\frac{1}{4}$ inches; iron case without back flange; silvered dial with cock.

List Price, with cock . . . \$6.00





Honeywell Heat Generators



Outside View



Sectional View

When connected to the piping of an ordinary gravity hot-water heating installation this Generator seals the circuit and permits the generation of a slight pressure up to 10 pounds: at this pressure it is relieved through the operation of a mercury seal which eliminates the element of danger.

The tendencies of this slight pressure are to increase the rapidity of circulation and to widen the range of temperatures to a point equal to that of steam.

Generators are simple to install and are applicable to both old and new heating plants.

List Prices, Each

Style No. 1 for 1200 feet of radiation or less	\$25.00
Style No. 2 for 1200 feet to 2500 feet	35.00
Style No. 3 for 2500 feet to 3500 feet	50.00
Style No. 4 for 3500 feet to 10,000 feet	65.00



Hot Water Thermometers

With Mercury Bath



Straight



Angle

Gurney hot water thermometers are of great assistance in governing the temperature of a hot-water installation.

The glass bulb of each instrument is immersed in a mercury bath, which insures accurate indication of temperatures.

These thermometers are well made and are shipped carefully packed in heavily corrugated paper boxes which give even better protection than wood.

List price, Straight Thermometers, each	\$1.50
List price, Angle Thermometers, each	2.00

Non-boiling, red colored liquid can be furnished at same price.
Name on scale free of charge when ordered in lots of 12.



Branch Headers — Cast Iron



Data and List Prices

Size Boiler	Size Inlets	Number of 2-inch Outlets	List price per set of flow and return Headers, including Nipples
400C-402C	3 inch	4	\$8.00
403C-405C	4 inch	4	10.00
405C	4 inch	6	15.00
405½C-409C	5 inch	7	24.00

Twin Ells—Cast Iron



Size, Inches	List Price, Each	Size, Inches	List Price, Each
3 x 2½	\$3.75	5 x 3	\$11.25
4 x 3	6.25	5 x 4	11.25

Ells as above listed tapped for thermometer and altitude gauge.



Heating a Swimming Pool by Direct Circulation

A swimming pool 20 feet by 35 feet, having an average depth of water of 5 feet, would require 6,107,458 B.T.U. to raise the temperature of the water 28° Fahrenheit, or from 50 to 78° (the latter is the usual required temperature for swimming pools). To do this work it would require the burning of 763 pounds of coal, which, if burned at the rate of 8 pounds of coal per hour per square foot of grate surface for 7 hours, would mean a boiler having 13.6 square feet of grate area or the equivalent of grate that is 40 inches by 49 inches or 30 inches by 65 inches.

Explanation: The total water to be heated in cubic feet would be $20 \times 35 \times 5 = 3,500$ cubic feet; a cubic foot of water weighs 62.321 pounds, and there would be in this pool $3,500 \times 62.321 = 218,123.5$ pounds of water. The water is to be raised 28 degrees Fahrenheit, and as one B.T.U. will raise 1 pound of water 1 degree, then $218,123.5 \times 28 = 6,107,458$, or the total number of B. T.U.'s necessary to raise this volume of water 28 degrees.

As a pound of coal is assumed to provide 8,000 available B.T.U.'s it will be necessary to burn as many pounds of coal as 8,000 is contained in 6,107,458, or 763 pounds of coal. As the work is to be done in 7 hours, then divide 763 by 7, which is 109, or there would be burned 109 pounds of coal per hour, and as 8 pounds of coal per hour per square foot of grate is rate of combustion assumed, then $109 \div 8$, gives 13.6, or the required amount of grate area in square feet.

How to Find the Size of Boiler to Heat Any Quantity of Water to Any Temperature in Any Given Time.

The following formula forms the basis for finding the grate area of boiler required for the heating of large volumes of water from any known temperature to any determined temperature.

Length \times Width \times Depth (or height) in feet equals cubic feet.

Cubic feet of water \times 62.321 equals pounds of water.

Pounds of water \times degrees Fahrenheit raise, equals total B.T.U.'s.

Total B.T.U.'s divided by 8,000 equals pounds of coal required.

Pounds of coal divided by hours of heating equals coal burned per hour.

Coal per hour divided by rate per square foot of grate equals area of grate in square feet.



Steel Storage Tanks for Gurney Water Supply Boilers

Where it is desired to have a fair supply of hot water at command, the following boilers and tanks will be found suitable under ordinary conditions, providing reasonable attention is given the fire and there is a proper draft in the chimney.

No. Boiler	U. S. Gallons	Size Tank Inches
12 Laundry	75	18 x 72
14 Laundry	125	24 x 60
16 Laundry	175	30 x 60
10 Jacket	75	18 x 72
10 Gothic	125	24 x 60
12 Gothic	175	30 x 60
14 Gothic	250	30 x 84
16 Gothic	325	30 x 108
16 Lenox	350	36 x 84
18 Lenox	425	36 x 108
20 Lenox	575	42 x 96
22 Lenox	675	42 x 120
24 Lenox	800	42 x 144

The quantity of hot water heated and the temperature depend on the amount of coal consumed. The extent to which the boiler is to be run will depend on the time allowed for heating the water and the demand for hot water. This can only be determined after consideration of all the facts. A tank capacity of 10 to 12 gallons for each person in an apartment should give good results, but this takes no account of shower baths or leaky fixtures.



Hourly Capacities for Water Supply Boilers

Raise in temperature 100 degrees Fahrenheit, or from 40 to 140, with varying rates of coal consumption:

No. Boiler	Lbs. of Coal per Sq. Ft. of Grate per Hour			
	3 (Fair)	6 (Moderate)	8 (Brisk)	10 (Strong)
	U. S. Gals.	U. S. Gals.	U. S. Gals.	U. S. Gals.
12 Laundry	14	28	38	47
14 Laundry	19	38	51	64
16 Laundry	25	50	67	84
10 Jacket	14	28	37	46
10 Gothic	16	31	42	52
12 Gothic	23	45	60	75
14 Gothic	31	62	82	103
16 Gothic	40	80	107	134
16 Lenox	43	85	114	142
18 Lenox	54	108	143	180
20 Lenox	73	145	194	242
22 Lenox	86	173	230	288
24 Lenox	102	205	272	340

To determine the capacity of any heater under any given condition for a lower or higher temperature raise than above, multiply any quantity by 100 and divide by the desired raise in temperature. The size boiler given in the first column will be the one required.

Example: How many gallons of water can be heated with a No. 18 Lenox in one hour from 50 degrees to 110 degrees Fahrenheit with fire burning 6 pounds of coal per square foot of grate surface per hour?

It will be observed from the table above that the No. 18 Lenox will heat 108 gallons of water from 40 to 140 degrees Fahrenheit, burning 6 pounds of coal per hour.

Then $100 \times 108 = 10800$.

$110 - 50 = 60$ degrees rise in temperature.

$10800 \div 60 = 180$ or the number of gallons of water heated from 50 to 110 degrees Fahrenheit per hour.



Areas of Circles

Size	Area	Size	Area	Size	Area	Size	Area
$\frac{1}{8}$	0.0123	11	95.03	30	706.86	65	3318.3
$\frac{1}{4}$	0.0491	$\frac{1}{2}$	103.86	31	754.76	66	3421.2
$\frac{3}{8}$	0.1104	12	113.09	32	804.24	67	3525.6
$\frac{1}{2}$	0.1963	$\frac{1}{2}$	122.71	$\frac{1}{4}$	816.86	68	3631.6
$\frac{5}{8}$	0.3067	13	132.73	33	855.30	69	3739.2
$\frac{3}{4}$	0.4417	$\frac{1}{2}$	143.13	34	907.92	70	3848.4
$\frac{7}{8}$	0.6013	14	153.93	35	962.11	71	3959.2
1	0.7854	$\frac{1}{2}$	165.13	$\frac{1}{4}$	975.90	72	4071.5
$\frac{1}{8}$	0.9940	15	176.71	36	1017.8	73	4185.3
$\frac{1}{4}$	1.227	$\frac{1}{2}$	188.69	37	1075.2	74	4300.8
$\frac{3}{8}$	1.484	16	201.06	38	1134.1	75	4417.8
$\frac{1}{2}$	1.767	$\frac{1}{2}$	213.82	39	1194.5	76	4536.4
$\frac{5}{8}$	2.073	17	226.98	40	1256.6	77	4656.0
$\frac{3}{4}$	2.405	$\frac{1}{4}$	240.52	41	1320.2	78	4778.3
$\frac{7}{8}$	2.761	18	254.46	42	1385.4	79	4901.6
2	3.141	$\frac{1}{2}$	268.80	43	1452.2	80	5026.5
$\frac{1}{4}$	3.976	19	283.52	44	1520.5	81	5153.0
$\frac{1}{2}$	4.908	$\frac{1}{2}$	298.64	45	1590.4	82	5281.0
$\frac{3}{4}$	5.939	20	314.16	46	1661.9	83	5410.6
3	7.068	$\frac{1}{4}$	322.06	47	1734.9	84	5541.7
$\frac{1}{4}$	8.295	21	346.36	48	1809.5	85	5674.5
$\frac{1}{2}$	9.621	$\frac{1}{2}$	363.05	49	1885.7	86	5808.8
$\frac{3}{4}$	11.044	22	380.13	50	1963.5	87	5944.6
4	12.566	$\frac{1}{4}$	388.82	51	2042.8	88	6082.1
$\frac{1}{2}$	15.904	23	415.47	52	2123.7	89	6221.1
5	19.635	$\frac{1}{2}$	433.73	53	2206.1	90	6361.7
$\frac{1}{2}$	23.758	24	452.39	54	2290.2	91	6503.8
6	28.274	$\frac{1}{2}$	471.43	55	2375.8	92	6647.6
$\frac{1}{2}$	33.183	25	490.87	56	2463.0	93	6792.9
7	38.484	$\frac{1}{4}$	500.74	57	2551.7	94	6939.7
$\frac{1}{2}$	44.178	$\frac{1}{2}$	510.71	58	2642.0	95	7088.2
8	50.265	26	530.93	59	2733.9	96	7238.2
$\frac{1}{2}$	56.745	27	572.55	60	2827.4	97	7389.8
9	63.617	$\frac{1}{4}$	583.21	61	2922.4	98	7542.9
$\frac{1}{2}$	70.882	28	615.75	62	3019.0	99	7697.7
10	78.54	29	660.52	63	3117.2	100	7854.0
$\frac{1}{2}$	86.59	$\frac{1}{4}$	671.96	64	3216.9	101	8011.87



Circumference of Circles

Size	Circumference	Size	Circumference	Size	Circumference	Size	Circumference
$\frac{1}{8}$	0.3927	10	31.416	30	94.248	65	204.204
$\frac{1}{4}$	0.7854	$\frac{1}{2}$	32.987	31	97.389	66	207.345
$\frac{3}{8}$	1.1781	11	34.558	32	100.531	67	210.487
$\frac{1}{2}$	1.5708	$\frac{1}{2}$	36.128	33	103.673	68	213.628
$\frac{5}{8}$	1.9635	12	37.699	34	106.814	69	216.770
$\frac{3}{4}$	2.3562	$\frac{1}{2}$	39.270	35	109.956	70	219.911
$\frac{7}{8}$	2.7489	13	40.841	36	113.097	71	223.053
1	3.1416	$\frac{1}{2}$	42.412	37	116.239	72	226.195
$\frac{1}{8}$	3.5343	14	43.982	38	119.381	73	229.336
$\frac{1}{4}$	3.9270	$\frac{1}{2}$	45.553	39	122.522	74	232.478
$\frac{3}{8}$	4.3197	15	47.124	40	125.664	75	235.619
$\frac{1}{2}$	4.7124	$\frac{1}{2}$	48.695	41	128.805	76	238.761
$\frac{5}{8}$	5.1051	16	50.265	42	131.947	77	241.903
$\frac{3}{4}$	5.4978	$\frac{1}{2}$	51.836	43	135.088	78	245.044
$\frac{7}{8}$	5.8905	17	53.407	44	138.230	79	248.186
2	6.2832	$\frac{1}{2}$	54.978	45	141.372	80	251.327
$\frac{1}{4}$	7.0686	18	56.549	46	144.513	81	254.469
$\frac{1}{2}$	7.8540	$\frac{1}{2}$	58.119	47	147.655	82	257.611
$\frac{3}{4}$	8.6394	19	59.690	48	150.796	83	260.752
3	9.4248	$\frac{1}{2}$	61.261	49	153.938	84	263.894
$\frac{1}{4}$	10.210	20	62.832	50	157.080	85	267.035
$\frac{1}{2}$	10.996	$\frac{1}{2}$	64.403	51	160.221	86	270.177
$\frac{3}{4}$	11.781	21	65.973	52	163.363	87	273.319
4	12.566	$\frac{1}{2}$	67.544	53	166.504	88	276.460
$\frac{1}{2}$	14.137	22	69.115	54	169.646	89	279.602
5	15.708	$\frac{1}{2}$	70.686	55	172.788	90	282.743
$\frac{1}{2}$	17.279	23	72.257	56	175.929	91	285.885
6	18.850	$\frac{1}{2}$	73.827	57	179.071	92	289.027
$\frac{1}{2}$	20.420	24	75.398	58	182.212	93	292.168
7	21.991	$\frac{1}{2}$	76.969	59	185.354	94	295.310
$\frac{1}{2}$	23.562	25	78.540	60	188.496	95	298.451
8	25.133	26	81.681	61	191.637	96	301.593
$\frac{1}{2}$	26.704	27	84.823	62	194.779	97	304.734
9	28.274	28	87.965	63	197.920	98	307.876
$\frac{1}{2}$	29.845	29	91.106	64	201.062	99	311.018



Square Feet of Radiating Surface of Pipe Per Lineal Foot

Length of Pipe in ft.	Size of Pipe									
	¾	1	1¼	1½	2	2½	3	4	5	6
1	.275	.346	.434	.494	.622	.753	.916	1.175	1.455	1.739
2	.5	.7	.9	1.0	1.2	1.5	1.8	2.4	2.9	3.5
3	.8	1.0	1.3	1.5	1.9	2.3	2.7	3.5	4.4	5.2
4	1.1	1.4	1.7	2.0	2.5	3.0	3.6	4.7	5.8	7.0
5	1.4	1.7	2.2	2.4	3.1	3.8	4.6	5.8	7.3	7.7
6	1.6	2.1	2.6	2.9	3.7	4.5	5.5	7.0	8.7	10.5
7	1.9	2.4	3.0	3.4	4.4	5.3	6.4	8.2	10.2	12.1
8	2.2	2.8	3.5	3.9	5.0	6.0	7.3	9.4	11.6	13.9
9	2.5	3.1	3.9	4.4	5.6	6.8	8.2	10.6	13.1	15.7
10	2.7	3.5	4.3	4.9	6.2	7.5	9.1	11.8	14.6	17.4
11	3.0	3.8	4.8	5.4	6.8	8.3	10.0	12.9	16.0	19.1
12	3.3	4.1	5.2	5.9	7.5	9.0	11.0	14.1	17.4	20.9
13	3.6	4.5	5.6	6.4	8.1	9.8	11.9	15.3	18.9	22.6
14	3.8	4.8	6.1	6.9	8.7	10.5	12.8	16.5	20.3	24.3
15	4.1	5.2	6.5	7.4	9.3	11.3	13.7	17.6	21.8	26.1
16	4.4	5.5	6.9	7.9	10.0	12.0	14.6	18.8	23.2	27.8
17	4.7	5.9	7.4	8.4	10.6	12.8	15.5	20.0	24.7	29.5
18	5.0	6.2	7.8	8.9	11.2	13.5	16.5	21.2	26.2	31.3
19	5.2	6.6	8.3	9.4	11.8	14.3	17.4	22.3	27.6	33.1
20	5.5	6.9	8.7	9.9	12.5	15.0	18.3	23.5	29.1	34.8
25	6.9	8.6	10.9	12.3	15.6	18.8	22.9	29.3	36.3	43.5
30	8.3	10.4	13.0	14.8	18.7	22.5	27.5	35.3	43.6	52.1
35	9.6	12.1	15.2	17.3	21.8	26.3	32.0	41.1	50.9	60.8
40	11.0	13.8	17.4	19.8	24.9	30.1	36.6	47.0	58.2	69.5
45	12.4	15.6	19.5	22.2	28.0	33.8	41.2	52.9	65.5	78.2
50	13.8	17.3	21.7	24.7	31.1	37.6	45.8	58.7	72.7	87.0
55	15.2	19.0	23.9	27.1	34.3	41.3	50.4	64.6	80.1	95.6
60	16.6	20.8	26.0	29.6	37.3	45.2	55.0	70.5	87.3	104.3
65	18.0	22.6	28.2	32.1	40.5	48.8	59.5	76.4	94.5	112.9
70	19.4	24.2	30.4	34.6	43.5	52.7	64.1	82.3	101.9	121.7
75	20.7	26.0	32.6	37.1	46.6	56.5	68.7	88.1	109.1	130.4
80	22.0	27.7	34.7	39.6	49.8	60.2	73.3	94.0	116.4	139.1
85	23.4	29.4	36.9	42.0	53.4	63.9	77.8	99.9	123.7	147.9
90	24.8	31.1	39.1	44.5	56.0	67.8	82.4	105.8	130.9	156.5
95	26.2	32.9	41.2	46.9	59.6	71.5	87.2	111.6	138.2	165.2
100	27.5	34.6	43.4	49.4	62.2	75.3	91.6	117.5	145.5	173.9



Capacities and Threads

Standard Wrought Iron Pipe

A	B	C	D	A	B	C	D
$\frac{1}{8}$	$\frac{9}{32}$	336.6	.024	$3\frac{1}{2}$	$\frac{1}{16}$	1.95	4.285
$\frac{1}{4}$	$\frac{3}{8}$	148.8	.044	4	$\frac{1}{8}$	1.51	5.517
$\frac{3}{8}$	$\frac{7}{16}$	100.8	.082	$4\frac{1}{2}$	$\frac{1}{4}$	1.20	6.908
$\frac{1}{2}$	$\frac{1}{2}$	63.2	.132	5	$\frac{3}{8}$	.96	8.668
$\frac{3}{4}$	$\frac{9}{16}$	36.1	.23	6	$\frac{1}{2}$	.66	12.52
1	$\frac{5}{8}$	22.3	.373	7	$\frac{3}{4}$	.49	16.79
$1\frac{1}{4}$	$\frac{11}{16}$	12.8	.648	8	$\frac{5}{8}$	.38	21.68
$1\frac{1}{2}$	$\frac{13}{16}$	9.4	.883	9	$\frac{3}{4}$	.30	27.58
2	$\frac{7}{8}$	5.7	1.454	10	$1\frac{1}{4}$	.24	34.17
$2\frac{1}{2}$	1	4.02	2.072	11	..	.20	41.18
3	1	2.6	3.202	12	..	.17	49.01

A = Nominal inside diameter, inches.

B = Length to thread, inches.

C = Number of lineal feet pipe containing one gallon of water.

D = Contained pounds of water, per lineal foot.

Expansion — Wrought Iron Pipe

Temperatures from 215° to 338°

Temp. of the air when pipe is fitted	Length of pipe when fitted	Length of pipe when heated to	
		215°	265°
Zero	100 feet	100 ft. 1.72 in.	100 ft. 2.12 in.
32°	100 feet	100 ft. 1.47 in.	100 ft. 1.78 in.
64°	100 feet	100 ft. 1.21 in.	100 ft. 1.61 in.
Temp. of the air when pipe is fitted	Length of pipe when fitted	Length of pipe when heated to	
		297°	338°
Zero	100 feet	100 ft. 2.31 in.	100 ft. 2.70 in.
32°	100 feet	100 ft. 2.12 in.	100 ft. 2.45 in.
64°	100 feet	100 ft. 1.87 in.	100 ft. 2.19 in.

Above information is quoted from standard authorities, but is not guaranteed.

Constants for Heat Transmission

B.T.U. transmitted per foot of radiating surface per hour per degree difference in temperature between inside and outside temperature.

Constants for Brick Work

Thickness of wall, inches	8	12	16	20	24	30	36
B. T. U. per foot per hour per degree difference in temperature	.46	.33	.27	.23	.20	.18	.15

Constants for Stone Walls, Rubble or Block Masonry

Thickness of wall, inches	12	16	20	24	28	36	44
B. T. U. per foot per hour per degree difference in temperature	.45	.40	.36	.30	.27	.25	.20

Constants for Pine Planks

Thickness planking, inches	1½	2	2½	3
B. T. U. per foot per hour per degree difference in temperature	.30	.26	.23	.20

Constants for Windows, Skylights, and Outside Walls

B. T. U. per foot per hour per degree difference in temperature.

Single window	1.10
Single window, double glass	.62
Double window	.50
Single skylight	1.16
¾ inch sheathing and clapboards	.30
¾ inch sheathing, paper and clapboards	.23

Constants for Heat Losses through Partitions, Floors and Ceilings

B. T. U. per foot per hour per degree difference in temperature.

Stud partition, lath and plaster one side	.26
Stud partition, lath and plaster both sides	.15
Ordinary lath and plaster ceiling separating unheated space from heated rooms	.26
Floor, single, thickness ¾ inch, warm air above and cold space below:	
A. No plaster beneath joists	.20
B. Lath and plaster beneath joists	.12
Floor, double, thickness 1½ inches, warm room above and cold space below:	
A. No plaster beneath joists	.13
B. Lath and plaster beneath joists	.08

NOTE. — The above values are compiled from well known authorities.



Constants for Heat Transmission — *Continued*

Constants for heat losses stated in tables on opposite page should be increased as follows: —

For northeastern, northwestern, western or northern exposure	20 to 30%
For rooms 13 to 14½ feet high	6½%
For rooms 14½ to 18 feet high	10%
When building is heated during the day only	30%
When building remains for long periods without heat	50%

Air Leakage

The question of air leakage is an important one, and should always be considered when figuring radiating surface. No definite allowance can be made with the exception, of course, where rooms are provided with ventilating flues which are allowed for independently, but the following rule is used with good results by many engineers:—

Multiply the cubic contents in feet by $\frac{1}{3}$ for rooms with two exposures and $\frac{2}{3}$ for rooms with one exposure, and add to heat losses by transmission and exposure as given in tables on opposite page and above.

Heat Given Off by Radiators

Repeated tests have shown the amount of heat given off by ordinary cast-iron radiators per foot of heating surface per hour per degree difference in temperature between the steam or water in the radiator and the air surrounding same to be about 1.6 B.T.U.

Taking this as a basis a steam radiator under 5 pounds pressure, corresponding to 228°, which is surrounded by air at 70°, will give off $(228 - 70) \times 1.6 = 253$, commonly taken as 250, or the total number of B.T.U. per foot of surface per hour. With hot water at an average temperature of 160° the heat given off is $(160 - 70) \times 1.6 = 144$, commonly taken as 150.

It is common practice to assume that ordinary indirect pin radiators with low pressure steam give off about 400 B.T.U. per foot of surface per hour, and that wall coils and wall radiators give off from 300 to 350 B.T.U. per foot of surface per hour, with low pressure steam. For water, 60% of these amounts.



Climatic Temperatures

LOWEST AND AVERAGE DEGREES

(Compiled from U. S. Weather Bureau Records)

State	City	Lowest	*Av.	State	City	Lowest	*Av.
Ala.	Mobile	— 1	57.7	Neb.	North Platte	—35	34.6
	Montgomery	— 5	56.1		Lincoln	—29	35.8
Ariz.	Flagstaff	—21	34.8	Nev.	Carson City	—22	
	Phoenix	22	58.9		Winnemucca	—28	37.9
Ark.	Fort Smith	—15	49.5	N. H.	Concord	—35	33.1
	Little Rock	—12	52.0	N. J.	Atlantic City	— 7	41.6
Cal.	San Diego	32	57.2	N. Y.	Saranac Lake	—38	34.1
	Independence	10	48.7		New York City	— 6	40.1
Col.	Denver	—29	38.4	N. M.	Roswell	—14	48.9
	Grand Jct.	—16	39.2		Santa Fé	—13	38.0
Conn.	Southington	—19	36.3	N. C.	Hatteras	8	53.3
D. C.	Washington	—15	42.9		Charlotte	— 5	49.8
Fla.	Jupiter	24	69.8	N. D.	Devil's Lake	—51	18.9
	Jacksonville	10	60.9		Bismarck	—44	23.5
Ga.	Savannah	8	57.2	Ohio	Toledo	—16	36.8
	Atlanta	— 8	51.4		Columbus	—20	39.8
Idaho	Boise	—28	39.6	Okla.	Oklahoma	—17	47.1
	Lewiston	—18	42.5	Ore.	Baker City	—20	34.1
Ill.	Chicago	—23	35.9		Portland	— 2	45.4
	Springfield	—22	39.0	Pa.	Pittsburgh	—20	40.8
Ind.	Indianapolis	—25	40.4		Philadelphia	— 6	41.8
	Evansville	—15	44.1	R. I.	Providence	— 9	37.5
Iowa	Sioux City	—31	32.1		Block Island	— 4	39.7
	Keokuk	—26	37.6	S. C.	Charleston	7	56.9
Kan.	Dodge City	—26			Columbia	2	53.5
	Wichita	—22	42.9	S. D.	Huron	—43	25.9
Ky.	Louisville	—20	45.0		Yankton	—32	31.2
La.	New Orleans	7	60.5	Tenn.	Knoxville	—16	47.0
	Shreveport	— 5	55.7		Memphis	— 9	50.7
Me.	Eastport	—21	31.1	Tex.	Corpus Christi	11	62.7
	Portland	—17	33.5		Fort Worth	— 8	49.5
Md.	Baltimore	— 7	43.3	Utah	Salt Lake City	—20	39.7
Mass.	Boston	—13	37.2	Vt.	Northfield	—32	27.8
Mich.	Alpena	—27	29.1	Va.	Cape Henry	5	48.6
	Detroit	—24	35.3		Lynchburg	— 5	45.2
Minn.	Duluth	—41	25.5	Wash.	Seattle	3	44.3
	Minneapolis	—33	28.4		Spokane	—30	37.0
Miss.	Meridian	— 6	53.9	W.Va.	Parkersburg	—27	41.9
	Vicksburg	— 1	56.0		Elkins	—21	38.8
Mo.	Springfield	—29	43.0	Wis.	La Crosse	—43	31.2
	Hannibal	—20	39.7		Milwaukee	—25	32.4
Mont.	Havre	—55	27.7	Wyo.	Cheyenne	—38	33.7
	Helena	—42	30.9		Lander	—36	29.0

*Oct. 1 to May 1st. All stated in Fahrenheit



Specific Gravity of Bodies

To find the weight of a body, determine its cubical contents and multiply its specific gravity by the weight of a like volume of water.

Body	Specific Gravity	Weight Per Cu. Ft. in Pounds
Water	1.00	62.5
Aluminum	2.50	156.3
Tin	7.29	455.6
Steel	7.84	490.0
Cast iron	7.21	450.6
Wrought iron	7.68	480.0
Brass	8.38	523.8
Copper	8.79	549.4
Lead	11.35	709.4
Mercury	13.60	850.0
Platinum	21.50	1343.8

Boiling Points of Various Fluids

Water in vacuum 98°	Refined Petroleum 316°
Water, atmospheric pressure 212°	Turpentine 315°
Alcohol 173°	Sulphur 570°
Sulphuric acid 240°	Linseed Oil 597°

Melting Points of Different Metals

Aluminum 1400°	Iron (cast) 2450°
Antimony 810°	Iron (wrought) 2912°
Bismuth 476°	Lead 608°
Brass 1900°	Platinum 3080°
Bronze 1692°	Silver (pure) 1873°
Copper 1996°	Steel 2500°
Glass 2377°	Tin 446°
Gold (pure) 2590°	Zinc 680°

Weight of Coal per Cubic Foot

One cubic foot of hard coal weighs 50 pounds.

One cubic foot of soft coal weighs 40 pounds.

One cubic foot of coke weighs 28 pounds.

NOTE. — Above weights are approximate only, but will be found sufficiently accurate for all purposes of figuring.



Table of Mains and Branches for Hot Water Heating

There is a wide variation of opinion on pipe sizes, but the following table will be found to give good results for open tank systems:—

Nominal Diameter of Pipes, Inches	Actual Inside Diameter, Inches	Capacity Feet Direct Radiating Surface
1¼	1.38	75
1½	1.61	108
2	2.07	250
2½	2.47	315
3	3.07	550
3½	3.55	800
4	4.03	1050
4½	4.50	1400
5	5.04	1800
6	6.06	2900
7	7.02	4300
8	7.98	5800

Capacities of Pipes for Indirect Hot Water Radiating Surface

Diameter of Pipes, Inches	Indirect Surface, Feet	Diameter of Pipes, Inches	Indirect Surface, Feet
1¼	56	4	800
1½	80	4½	1000
2	150	5	1400
2½	235	6	2220
3	400	7	3200
3½	580	8	4400

Table of Mains and Branches

- One 1 inch will supply two ¾ inch.
- One 1¼ inch will supply two 1 inch.
- One 1½ inch will supply two 1¼ inch.
- One 2 inch will supply two 1½ inch.
- One 2½ inch will supply two 1½ inch and one 1¼ inch, or one 2 inch and one 1¼ inch.
- One 3 inch will supply one 2½ inch and one 2 inch, or two 2 inch and one 1½ inch.
- One 4 inch will supply one 3½ inch and one 2½ inch or two 3 inch or four 2 inch.



Sizes of Pipes for Low Pressure Steam Heating

The pipe sizes given in the following table will be found conservative and reliable in proportioning low pressure steam mains.

Diameter of Pipes, Inches	Feet of Radiating Surface	Diameter of Pipes, Inches	Feet of Radiating Surface
1	46	4½	2,270
1¼	96	5	2,960
1½	150	6	4,780
2	272	7	7,050
2½	470	8	10,000
3	845	9	13,300
3½	1230	10	17,700
4	1680	12	28,200

Capacity of Up Feed Risers, 1-Pipe System

Size of Riser, Inches	C. I. Radiating Surface Supplied	Size of Riser, Inches	C. I. Radiating Surface Supplied
1	50 feet	2½	300 feet
1¼	90 feet	3	450 feet
1½	130 feet	3½	600 feet
2	210 feet	4	800 feet

Capacity of Up Feed Risers, 2-Pipe System

Size of Riser, Inches	C. I. Radiating Surface Supplied	Size of Riser, Inches	C. I. Radiating Surface Supplied
1	70 feet	2½	570 feet
1¼	130 feet	3	1020 feet
1½	190 feet	3½	1490 feet
2	330 feet	4	2000 feet

Above tables for risers based on 15 feet per second steam velocity — 2 pounds steam pressure at radiators.



Pressures and Boiling Points of Water for Given Static Heads

Height of Column, Feet	Pressure per Sq. Inch, Pounds	Boiling Point at Boiler — Fahrenheit
2	0.866	214.9
3	1.299	216.3
4	1.732	217.6
5	2.165	219.0
6	2.598	220.3
7	3.031	221.6
8	3.464	222.8
9	3.897	224.1
10	4.330	225.3
15	6.500	231.0
20	8.660	236.2
25	10.830	241.2
30	12.990	245.7
35	15.160	249.9
40	17.320	253.8
45	19.490	257.7
50	21.650	261.3

From the above table it will be seen that the pressure per square inch at the boiler and the boiling point of the water at boiler varies directly with the height of expansion tank above the boiler.

The pressure produced by a column of water is called the "static head," and a head or column of water 1 foot high produces a pressure of 0.433 pound per square inch.

For all purposes of figuring it is sufficiently accurate to say that:

1 cubic foot of water weighs 62.5 pounds.

1 cubic inch of water weighs 0.036 pound.

7.48 U. S. gallons equal 1 cubic foot.

6 imperial gallons equal 1 cubic foot.

1 U. S. gallon weighs 8.33 pounds.

1 imperial gallon weighs 10 pounds.

Water presents a singular exception to the general law of expansion by heat. If water at 39.2 degrees is cooled, it expands as it cools till reduced to 32 degrees, when it solidifies in the form of ice; and if water at 39.2 degrees is heated it expands as the temperature increases, in accordance with the general law.



Horse Power of Cast Iron Boilers

For the convenience of the heating engineer who prefers to think of heating capacity or power in terms of boiler "horse power" the following data are submitted with the belief it will prove of mutual benefit.

Kent's M. E. 8th edition Pocket Book states:

"The A. S. M. E. Committee on Boiler Tests, 1884, defined it (horse power) as equivalent to 34.5 lbs. evaporated per hour, from a feed-water temperature of 212° into steam at the same temperature. The committee of 1889 adopted this definition, 34.5 lbs. per hour, from and at 212°, as the unit of commercial horse power. Using the figures for total heat of steam given in Mark and Davis' steam tables (1909), 34.5 lbs. from and at 212° is equivalent to 33,479 B. T. U. per hour, or to an evaporation of 30.018 lbs. from 100° feed-water temperature into steam at 70 lbs. pressure."

Owing to the difference in evaporative capacity per square foot of heating surface between different types of boilers and the varying draft intensities to be met with, it is impossible to arbitrarily determine the horse power of any given boiler by the amount of heating surface which it contains.

For example: one square foot of active heating surface will evaporate from 3 to 6 pounds of water from and at 212° Fahrenheit, and the quantity of heating surface per boiler horse power varies from 6 to 12 square feet, depending upon the draft intensity and the type of boiler used.

As repeated tests have shown, however, that one square foot of direct cast-iron radiating surface will condense .25 pounds of steam per square foot of surface per hour, and as one boiler horse power is equivalent to 34.5 pounds water evaporated per hour from and at a feed water temperature of 212° into steam at the same temperature, one boiler horse power will supply 138 feet of direct cast-iron surface ($34.5 \div .25 = 138$).

Therefore if the rated capacity of a low-pressure cast-iron steam boiler is based on the exact tests to which Gurney Boilers are submitted, the catalog rating divided by 138 will give the approximate horse power of any Gurney Boiler.



Chimney Flues

The selection of chimney flues for heating boilers must depend largely upon the judgment of the heating engineer or contractor. No tabular statements can be guaranteed, but the following table when used in connection with smokepipe sizes given for each size of Gurney Boiler should be of assistance in selecting flues.

Direct Radiation		Size of Flue	
Steam in Feet	Water in Feet	Round	Rectangular
250	400	8 inches	8 x 8 inches
300	500	8 "	8 x 8 "
400	700	8 "	8 x 8 "
500	850	10 "	8 x 12 "
600	1000	10 "	8 x 12 "
700	1200	10 "	8 x 12 "
800	1350	12 "	12 x 12 "
900	1500	12 "	12 x 12 "
1000	1700	12 "	12 x 12 "
1200	2100	12 "	12 x 12 "
1400	2400	14 "	12 x 16 "
1600	2700	14 "	12 x 16 "
1800	3000	14 "	12 x 16 "
2000	3400	14 "	12 x 16 "
2200	3700	16 "	12 x 16 "
3000	5100	16 "	12 x 16 "
3500	5900	18 "	16 x 20 "
5000	8500	18 "	16 x 20 "

The flue area of chimney should be at least 8 inches round or 8 x 8 square. Round flues are preferable to square flues and tile-lined flues are much better than brick flues. Shallow flues, or flues with a comparatively small depth measurement in proportion to length, should be avoided; smoke travels in a spiral manner, and while the actual area of an 8 x 16 flue might be large enough to take care of a 12-inch smokepipe, the available area would only be equal to an 8 x 8 square or 8-inch round flue, which are only large enough to take care of a 7 or 8-inch smokepipe.

Flues should always have an area in excess of smokepipe area called for in boiler catalog.



Chimney Flues — *Continued*

Chimney flues should run as nearly straight up from the base to the top outlet as possible. There should be no other openings into them except boiler smokepipe. If there is a soot pocket in the flue below smokepipe opening, a tightly fitted door should be provided and kept closed.

The chimney-top should be carried above the highest part of the roof, and should, if possible, be at least 35 feet in height. When it is not possible to obtain a height of 35 feet the area should be increased to overcome the deficiency in draft due to lack of height.

The outlet of chimney flue should not be capped so that area of outlet is less than area of flue, and chimney should be located so that higher buildings near by will not form wind eddies and force the air downward into the flue. If, for structural reasons, it is impossible to locate chimney so that these conditions can be complied with, or if it is impracticable to carry chimney above the highest building near by, a shifting cowl can be used on chimney top with fairly good results.

The value of any chimney flue depends on volume of passage due to area and velocity due to height. The most common error in determining chimney flue capacity is that of judging capacity or suitability of any given flue by velocity. Velocity alone is no proof of good draft — there must also be sufficient area to carry away the products of combustion.

The heating contractor should personally assure himself that the chimney flue for any given installation meets the requirements as given on this and the opposite page before signing contract which guarantees any specific degree of satisfaction or results.



Price List of Iron Fittings

Revised and Adopted January 1, 1913

Sizes, Inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Elbows	5	5	6	8	10 1/2	16	20	28	50	75	1.05	1.20
Reducing	6	6	7	9	12	18	23	32	60	85	1.20	1.40
45° C. I.	6	6	7	10	12	19	24	34	60	90	1.25	1.45
Tees, Cast	8	8	9	12	15	23	29	41	73	1.10	1.50	1.75
Reducing	..	9	10	14	17	27	33	47	83	1.25	1.75	2.00
Crosses	..	15	16	22	27	42	53	75	1.30	2.00	2.70	3.15
Reducing	..	..	18	25	30	46	60	83	1.45	2.20	3.00	3.50
Reducing Couplings	3	3	5	10	16	20	28	45	70	1.00	1.50	1.85
C. I.	..	..	..	..	..	..	..	43	60	80	1.00	1.35
Plugs	..	..	..	..	..	..	..	..	..	..	..	..
C. I.	2	2	2	3	4	5	7	10	18	25	38	42
Bushings	4	4	4	5	6	7	9	14	21	30	40	50
Caps, M. I.	3	4	5	8	12	16	24	32	45	85	1.50	2.00
Couplings	..	..	..	..	..	..	..	..	..	..	..	..
R. H.	5	6	7	10	13	17	21	28	40	60	89	1.00
W. I., R. & L.	7	8	11	15	20	25	30	50	85	1.20	1.60	2.00
Nipples	..	..	..	..	..	..	..	..	..	..	..	..
Close	4	4	5	6	8	11	13	18	39	48	75	.85
" R. & L.	5	5	7	8	11	15	18	24	52	65	1.00	1.15
Long	6	6	7	9	13	17	20	27	59	72	1.05	1.20
" R. & L.	8	8	10	12	18	23	27	36	79	96	1.40	1.60
Locknuts	..	..	..	..	..	..	..	..	..	..	..	..
C. I.	..	..	..	..	..	..	..	25	27	34	47	64
Unions	..	..	..	..	..	..	..	..	..	..	..	..
Malleable	18	20	22	27	33	46	58	75	1.55	2.10	3.65	4.25
Union	..	..	..	..	..	..	..	..	..	..	..	..
Flanges	..	..	40	46	52	64	78	1.00	1.25	1.50	1.80	2.10

NOTE. — We do not handle or quote on fittings. The above list is published for the convenience attendant in having all necessary cost data contained in one publication.



Manufacturer's Price List

Revised and Adopted January 1, 1913

STANDARD STEEL PIPE

Nominal Size Inside Diameter Inches	Price Black per Foot	Price Galv'd per Foot	Nominal Size Inside Diameter Inches	Price per Foot X Strong	Price per Foot XX Strong
$\frac{1}{8}$	.05 $\frac{1}{2}$	Same List as Black Pipe	$\frac{1}{8}$	.12	...
$\frac{1}{4}$	.06		$\frac{1}{4}$	.07 $\frac{1}{2}$	...
$\frac{3}{8}$	.06		$\frac{3}{8}$	.07 $\frac{1}{2}$	.32
$\frac{1}{2}$	.08 $\frac{1}{2}$		$\frac{1}{2}$	.11	.32
$\frac{3}{4}$	.11 $\frac{1}{2}$		$\frac{3}{4}$	.15	.35
1	.17		1	.22	.37
1 $\frac{1}{4}$	.23		1 $\frac{1}{4}$	.30	.52 $\frac{1}{2}$
1 $\frac{1}{2}$	.27 $\frac{1}{2}$		1 $\frac{1}{2}$	.36 $\frac{1}{2}$	.65
2	.37		2	.50 $\frac{1}{2}$	.91
2 $\frac{1}{2}$	.58 $\frac{1}{2}$		2 $\frac{1}{2}$	.77	1.37
3	.76 $\frac{1}{2}$		3	1.03	1.86
3 $\frac{1}{2}$	.92		3 $\frac{1}{2}$	1.25	2.30
4	1.09		4	1.50	2.76
4 $\frac{1}{2}$	1.27		4 $\frac{1}{2}$	1.80	3.26
5	1.48		5	2.08	3.86
6	1.92		6	2.86	5.32
7	2.38		7	3.81	6.35
8 25 lb.	2.50		8	4.34	7.25
8 28 lb.	2.88		9	4.90	...
9	3.45		10	5.48	...
10 35 lb.	3.50		12	6.55	...
10 41 lb.	4.12		...	...	...
12 45 lb.	4.50		..	...	...
12 50 lb.	5.07		...	...	...

NOTE. — We do not handle or quote on fittings. The above list is published for the convenience attendant in having all necessary cost data contained in one publication.



Cubical Contents of Rooms

Having Ceilings of the Following Heights

Floor Area	8 ft.	8½ ft.	9 ft.	9½ ft.	10 ft.	10½ ft.	11 ft.	12 ft.
8 x 8	512	544	576	608	640	672	704	768
8 x 8½	544	578	612	646	680	714	748	816
8 x 9	576	612	648	684	720	756	792	864
8 x 9½	608	646	684	722	760	798	836	912
8 x 10	640	680	720	760	800	840	880	960
8 x 10½	672	714	756	798	840	882	924	1008
8 x 11	704	748	792	836	880	924	968	1056
8 x 11½	736	782	828	874	920	966	1012	1104
8 x 12	768	816	864	912	960	1008	1056	1152
8 x 12½	800	850	900	950	1000	1050	1100	1200
8 x 13	832	884	936	988	1040	1092	1144	1248
8 x 13½	864	918	972	1026	1080	1134	1188	1296
8 x 14	896	952	1008	1064	1120	1176	1232	1344
8 x 14½	928	986	1044	1102	1160	1218	1276	1392
8 x 15	960	1020	1080	1140	1200	1260	1320	1440
8 x 15½	992	1054	1116	1178	1240	1302	1364	1488
8 x 16	1024	1088	1152	1216	1280	1344	1408	1536
8½ x 8½	578	614	650	686	723	759	794	867
8½ x 9	612	650	689	726	765	803	841	918
8½ x 9½	646	686	727	767	808	848	888	969
8½ x 10	680	723	765	807	850	893	935	1020
8½ x 10½	714	759	803	847	893	937	981	1071
8½ x 11	748	795	842	888	935	982	1028	1122
8½ x 11½	782	831	880	928	978	1026	1075	1173
8½ x 12	816	867	918	969	1020	1071	1122	1224
8½ x 12½	850	903	956	1009	1063	1116	1168	1275
8½ x 13	884	939	995	1049	1105	1160	1215	1326
8½ x 13½	918	975	1033	1090	1148	1205	1262	1377
8½ x 14	952	1012	1071	1130	1190	1250	1309	1428
8½ x 14½	986	1048	1109	1170	1233	1294	1355	1479
8½ x 15	1020	1084	1148	1211	1275	1339	1402	1530
8½ x 15½	1054	1120	1186	1251	1318	1383	1449	1581
8½ x 16	1088	1156	1224	1292	1360	1428	1496	1632
8½ x 16½	1122	1192	1262	1332	1403	1473	1542	1683
8½ x 17	1156	1228	1301	1372	1445	1517	1589	1734
9 x 9	648	689	729	769	810	851	891	972
9 x 9½	684	727	770	812	855	898	940	1026
9 x 10	720	765	810	855	900	945	990	1080
9 x 10½	756	803	851	897	945	992	1039	1134
9 x 11	792	842	891	940	990	1040	1089	1188
9 x 11½	828	880	932	982	1035	1087	1138	1242



Cubical Contents of Rooms—Continued **Having Ceilings of the Following Heights**

Floor Area	8 ft.	8 1/2 ft.	9 ft.	9 1/2 ft.	10 ft.	10 1/2 ft.	11 ft.	12 ft.
9 x 12	864	918	972	1026	1080	1134	1188	1296
9 x 12 1/2	900	956	1013	1068	1125	1181	1237	1350
9 x 13	936	995	1053	1111	1170	1229	1287	1404
9 x 13 1/2	972	1033	1094	1154	1215	1276	1336	1458
9 x 14	1008	1071	1134	1197	1260	1323	1386	1512
9 x 14 1/2	1044	1109	1175	1239	1305	1370	1435	1566
9 x 15	1080	1148	1215	1282	1350	1418	1485	1620
9 x 15 1/2	1116	1186	1256	1325	1395	1465	1534	1674
9 x 16	1152	1224	1296	1368	1440	1512	1584	1728
9 x 16 1/2	1188	1262	1337	1410	1485	1559	1633	1782
9 x 17	1224	1301	1377	1453	1530	1607	1683	1836
9 x 17 1/2	1260	1339	1418	1496	1575	1654	1732	1890
9 x 18	1296	1377	1458	1539	1620	1701	1782	1944
9 1/2 x 9 1/2	722	767	812	857	903	948	992	1083
9 1/2 x 10	760	808	855	902	950	998	1045	1140
9 1/2 x 10 1/2	798	848	898	947	998	1047	1097	1197
9 1/2 x 11	836	888	940	992	1045	1097	1149	1254
9 1/2 x 11 1/2	874	929	983	1038	1093	1147	1201	1311
9 1/2 x 12	912	969	1026	1083	1140	1197	1254	1368
9 1/2 x 12 1/2	950	1009	1069	1128	1188	1247	1306	1425
9 1/2 x 13	988	1050	1111	1173	1235	1297	1358	1482
9 1/2 x 13 1/2	1026	1090	1154	1218	1283	1347	1410	1539
9 1/2 x 14	1064	1131	1197	1263	1330	1397	1463	1596
9 1/2 x 14 1/2	1102	1171	1240	1308	1378	1446	1515	1653
9 1/2 x 15	1140	1211	1282	1353	1425	1496	1567	1710
9 1/2 x 15 1/2	1178	1252	1325	1398	1473	1546	1619	1767
9 1/2 x 16	1216	1292	1368	1444	1520	1596	1672	1824
9 1/2 x 16 1/2	1254	1332	1411	1489	1568	1646	1724	1881
9 1/2 x 17	1292	1373	1453	1534	1615	1696	1776	1938
9 1/2 x 17 1/2	1330	1413	1496	1579	1663	1746	1828	1995
9 1/2 x 18	1368	1454	1539	1624	1710	1796	1881	2052
9 1/2 x 18 1/2	1406	1494	1582	1669	1758	1845	1933	2109
9 1/2 x 19	1444	1534	1625	1714	1805	1895	1985	2166
10 x 10	800	850	900	950	1000	1050	1100	1200
10 x 10 1/2	840	893	945	997	1050	1103	1155	1260
10 x 11	880	935	990	1045	1100	1155	1210	1320
10 x 11 1/2	920	978	1035	1092	1150	1208	1265	1380
10 x 12	960	1020	1080	1140	1200	1260	1320	1440
10 x 12 1/2	1000	1063	1125	1187	1250	1313	1375	1500
10 x 13	1040	1105	1170	1235	1300	1365	1430	1560
10 x 13 1/2	1080	1148	1215	1282	1350	1418	1485	1620

Cubical Contents of Rooms — *Continued*

Having Ceilings of the Following Heights

Floor Area		8 ft.	8 ½ ft.	9 ft.	9 ½ ft.	10 ft.	10 ½ ft.	11 ft.	12 ft.
10	x 14	1120	1190	1260	1330	1400	1470	1540	1680
10	x 14 ½	1160	1233	1305	1377	1450	1523	1595	1740
10	x 15	1200	1275	1350	1425	1500	1575	1650	1800
10	x 15 ½	1240	1318	1395	1472	1550	1628	1705	1860
10	x 16	1280	1360	1440	1520	1600	1680	1760	1920
10	x 16 ½	1320	1403	1485	1567	1650	1733	1815	1980
10	x 17	1360	1445	1530	1615	1700	1785	1870	2040
10	x 17 ½	1400	1488	1575	1662	1750	1838	1925	2100
10	x 18	1440	1530	1620	1710	1800	1890	1980	2160
10	x 18 ½	1480	1573	1665	1757	1850	1943	2035	2220
10	x 19	1520	1615	1710	1805	1900	1995	2090	2280
10	x 19 ½	1560	1658	1755	1852	1950	2048	2145	2340
10	x 20	1600	1700	1800	1900	2000	2100	2200	2400
11	x 11	968	1029	1089	1149	1210	1271	1331	1452
11	x 12	1056	1122	1188	1254	1320	1386	1452	1584
11	x 13	1144	1216	1287	1358	1430	1502	1573	1716
11	x 14	1232	1309	1386	1463	1540	1617	1694	1848
11	x 15	1320	1403	1485	1567	1650	1733	1815	1980
11	x 16	1408	1496	1584	1672	1760	1848	1936	2112
11	x 17	1496	1590	1683	1776	1870	1964	2057	2244
11	x 18	1584	1683	1782	1881	1980	2079	2178	2376
11	x 19	1672	1777	1881	1986	2090	2195	2299	2508
11	x 20	1760	1870	1980	2090	2200	2310	2420	2640
11	x 21	1848	1964	2079	2194	2310	2426	2541	2772
11	x 22	1936	2057	2178	2299	2420	2541	2662	2904
12	x 12	1152	1224	1296	1368	1440	1512	1584	1728
12	x 13	1248	1326	1404	1482	1560	1638	1716	1872
12	x 14	1344	1428	1512	1596	1680	1764	1848	2016
12	x 15	1440	1530	1620	1710	1800	1890	1980	2160
12	x 16	1536	1632	1728	1824	1920	2016	2112	2304
12	x 17	1632	1734	1836	1938	2040	2142	2244	2448
12	x 18	1728	1836	1944	2052	2160	2268	2376	2592
12	x 19	1824	1938	2052	2166	2280	2394	2508	2736
12	x 20	1920	2040	2160	2280	2400	2520	2640	2880
12	x 21	2016	2142	2268	2394	2520	2646	2772	3024
12	x 22	2112	2244	2376	2508	2640	2772	2904	3168
12	x 23	2208	2346	2484	2622	2760	2898	3036	3312
12	x 24	2304	2448	2592	2736	2880	3024	3168	3456
13	x 13	1352	1437	1521	1605	1690	1775	1859	2028
13	x 14	1456	1547	1638	1729	1820	1911	2002	2184
13	x 15	1560	1658	1755	1852	1950	2048	2145	2340



Cubical Contents of Rooms — *Continued* **Having Ceilings of the Following Heights**

Floor Area	8 ft.	8 ½ ft.	9 ft.	9 ½ ft.	10 ft.	10 ½ ft.	11 ft.	12 ft.
13 x 16	1664	1768	1872	1976	2080	2184	2288	2496
13 x 17	1768	1879	1989	2099	2210	2321	2431	2652
13 x 18	1872	1989	2106	2223	2340	2457	2574	2808
13 x 19	1976	2100	2223	2346	2470	2594	2717	2964
13 x 20	2080	2210	2340	2470	2600	2730	2860	3120
13 x 21	2184	2321	2457	2593	2730	2867	3003	3276
13 x 22	2288	2431	2574	2717	2860	3003	3146	3432
13 x 23	2392	2542	2691	2840	2990	3140	3289	3588
13 x 24	2496	2652	2808	2964	3120	3276	3432	3744
13 x 25	2600	2763	2925	3087	3250	3413	3575	3900
13 x 26	2704	2873	3042	3211	3380	3549	3718	4056
14 x 14	1568	1666	1764	1862	1960	2058	2156	2352
14 x 15	1680	1785	1890	1995	2100	2205	2310	2520
14 x 16	1792	1904	2016	2128	2240	2352	2464	2688
14 x 17	1904	2023	2142	2261	2380	2499	2618	2856
14 x 18	2016	2142	2268	2394	2520	2646	2772	3024
14 x 19	2128	2261	2394	2527	2660	2793	2926	3192
14 x 20	2240	2380	2520	2660	2800	2940	3080	3360
14 x 21	2352	2499	2646	2793	2940	3087	3234	3528
14 x 22	2464	2618	2772	2926	3080	3234	3388	3696
14 x 23	2576	2737	2898	3059	3220	3381	3542	3864
14 x 24	2688	2856	3024	3192	3360	3528	3696	4032
14 x 25	2800	2975	3150	3325	3500	3675	3850	4200
14 x 26	2912	3094	3276	3458	3640	3822	4004	4368
14 x 27	3024	3213	3402	3591	3780	3969	4158	4536
14 x 28	3136	3332	3528	3724	3920	4116	4312	4704
15 x 15	1800	1913	2025	2137	2250	2363	2475	2700
15 x 16	1920	2040	2160	2280	2400	2520	2640	2880
15 x 17	2040	2168	2295	2422	2550	2678	2805	3060
15 x 18	2160	2295	2430	2565	2700	2835	2970	3240
15 x 19	2280	2423	2565	2707	2850	2993	3135	3420
15 x 20	2400	2550	2700	2850	3000	3150	3300	3600
15 x 21	2520	2678	2835	2992	3150	3308	3465	3780
15 x 22	2640	2805	2970	3135	3300	3465	3630	3960
15 x 23	2760	2933	3105	3277	3450	3623	3795	4140
15 x 24	2880	3060	3240	3420	3600	3780	3960	4320
15 x 25	3000	3188	3375	3562	3750	3938	4125	4500
15 x 26	3120	3315	3510	3705	3900	4095	4290	4680
15 x 27	3240	3443	3645	3847	4050	4253	4455	4860
15 x 28	3360	3570	3780	3990	4200	4410	4620	5040
15 x 29	3480	3698	3915	4132	4350	4568	4785	5220



Cubical Contents of Rooms — *Continued*
Having Ceilings of the Following Heights

Floor Area	8 ft.	8½ ft.	9 ft.	9½ ft.	10 ft.	10½ ft.	11 ft.	12 ft.
15 x 30	3600	3825	4050	4275	4500	4725	4950	5400
16 x 16	2048	2176	2304	2432	2560	2688	2816	3072
16 x 17	2176	2312	2448	2584	2720	2856	2992	3264
16 x 18	2304	2448	2592	2736	2880	3024	3168	3456
16 x 19	2432	2584	2736	2888	3040	3192	3344	3648
16 x 20	2560	2720	2880	3040	3200	3360	3520	3840
16 x 21	2688	2856	3024	3192	3360	3528	3696	4032
16 x 22	2816	2992	3168	3344	3520	3696	3872	4224
16 x 23	2944	3128	3312	3496	3680	3864	4048	4416
16 x 24	3072	3264	3456	3648	3840	4032	4224	4608
16 x 25	3200	3400	3600	3800	4000	4200	4400	4800
16 x 26	3328	3536	3744	3952	4160	4368	4576	4992
16 x 27	3456	3672	3888	4104	4320	4536	4752	5184
16 x 28	3584	3808	4032	4256	4480	4704	4928	5376
16 x 29	3712	3944	4176	4408	4640	4872	5104	5568
16 x 30	3840	4080	4320	4560	4800	5040	5280	5760
16 x 31	3968	4216	4464	4712	4960	5208	5456	5952
16 x 32	4096	4352	4608	4864	5120	5376	5632	6144
18 x 18	2592	2754	2916	3078	3240	3402	3564	3888
18 x 20	2880	3060	3240	3420	3600	3780	3960	4320
18 x 22	3168	3366	3564	3762	3960	4158	4356	4752
18 x 24	3456	3672	3888	4104	4320	4536	4752	5184
18 x 26	3744	3978	4212	4446	4680	4914	5148	5616
18 x 28	4032	4284	4536	4788	5040	5292	5544	6048
18 x 30	4320	4590	4860	5130	5400	5670	5940	6480
18 x 32	4608	4896	5184	5472	5760	6048	6336	6912
18 x 34	4896	5202	5508	5814	6120	6426	6732	7344
18 x 36	5184	5508	5832	6156	6480	6804	7128	7776
20 x 20	3200	3400	3600	3800	4000	4200	4400	4800
20 x 22	3520	3740	3960	4180	4400	4620	4840	5280
20 x 24	3840	4080	4320	4560	4800	5040	5280	5760
20 x 26	4160	4420	4680	4940	5200	5460	5720	6240
20 x 28	4480	4760	5040	5320	5600	5880	6160	6720
20 x 30	4800	5100	5400	5700	6000	6300	6600	7200
20 x 32	5120	5440	5760	6080	6400	6720	7040	7680
20 x 34	5440	5780	6120	6460	6800	7140	7480	8160
20 x 36	5760	6120	6480	6840	7210	7560	7920	8640
20 x 38	6080	6460	6840	7220	7600	7980	8360	9120
20 x 40	6400	6800	7200	7600	8000	8400	8800	9600



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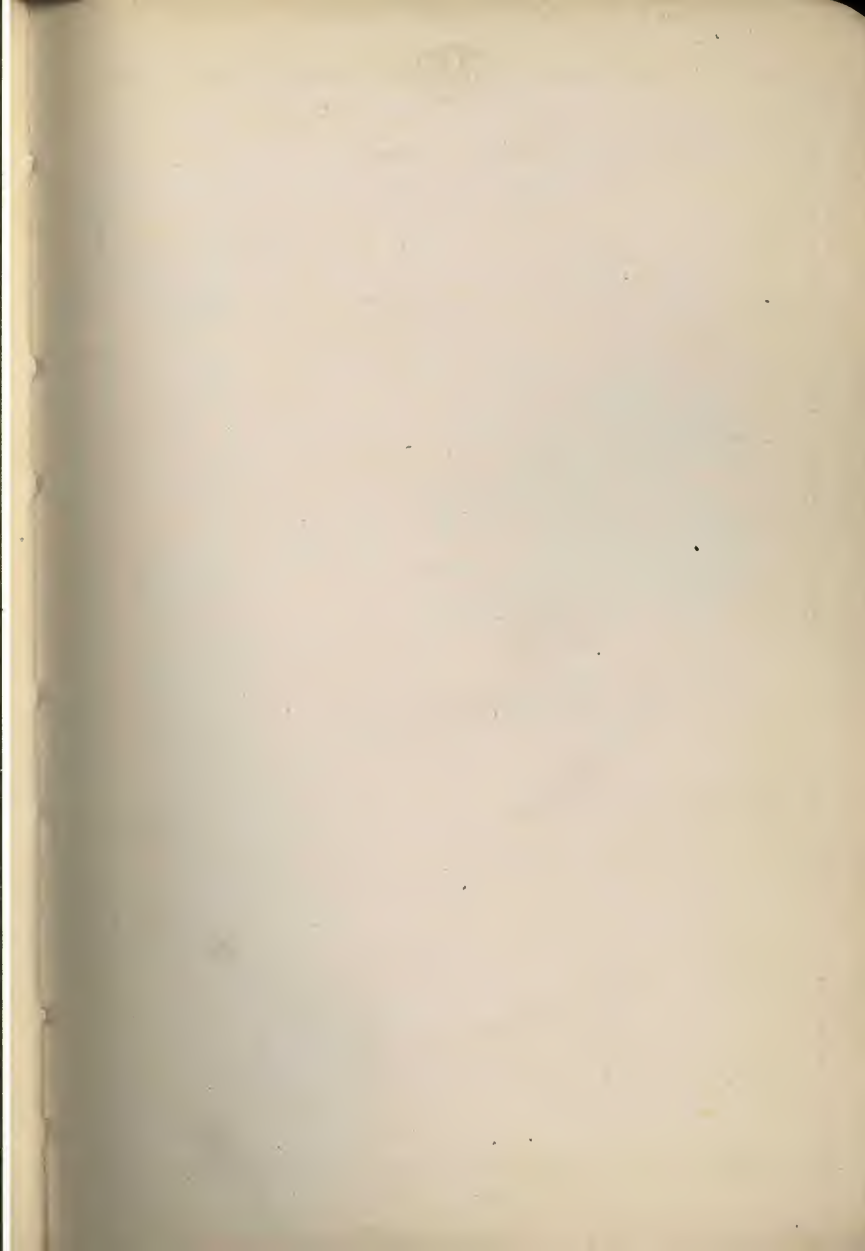
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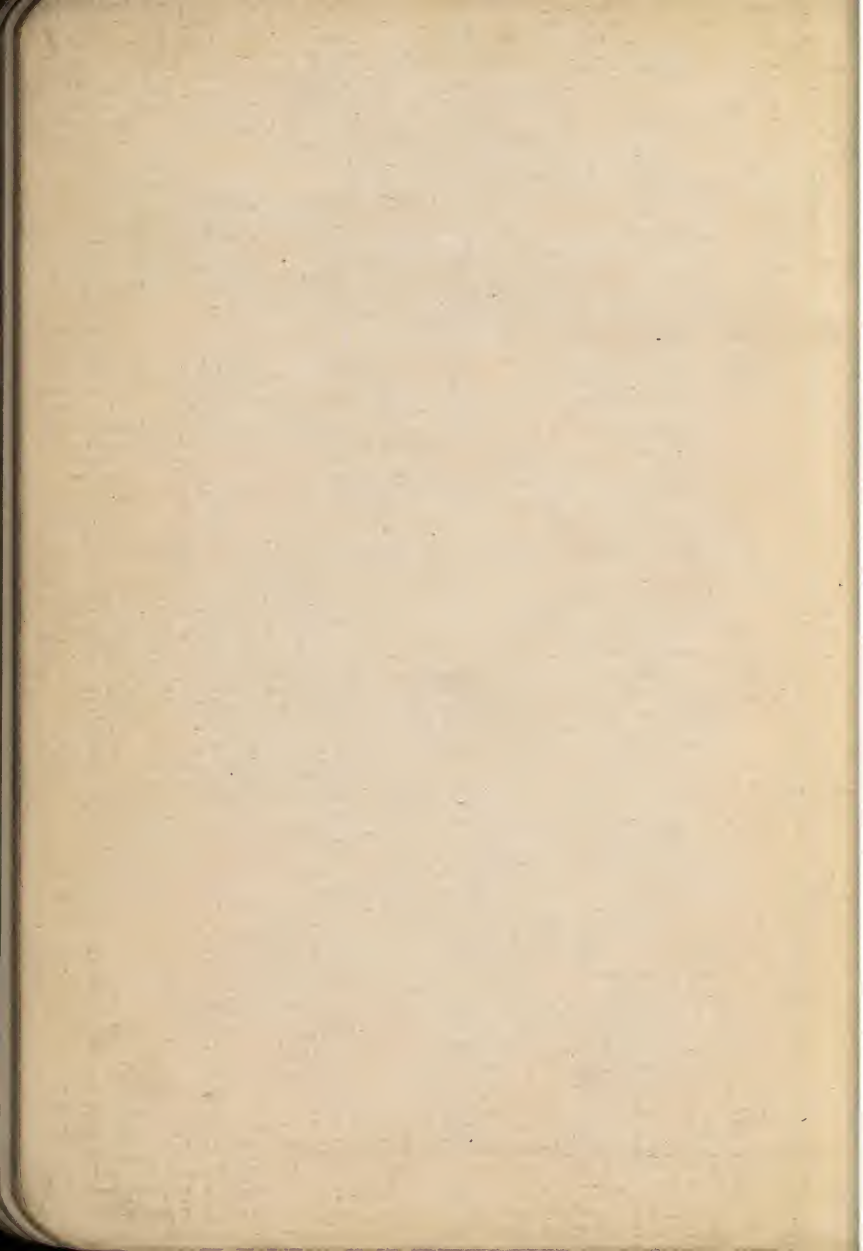
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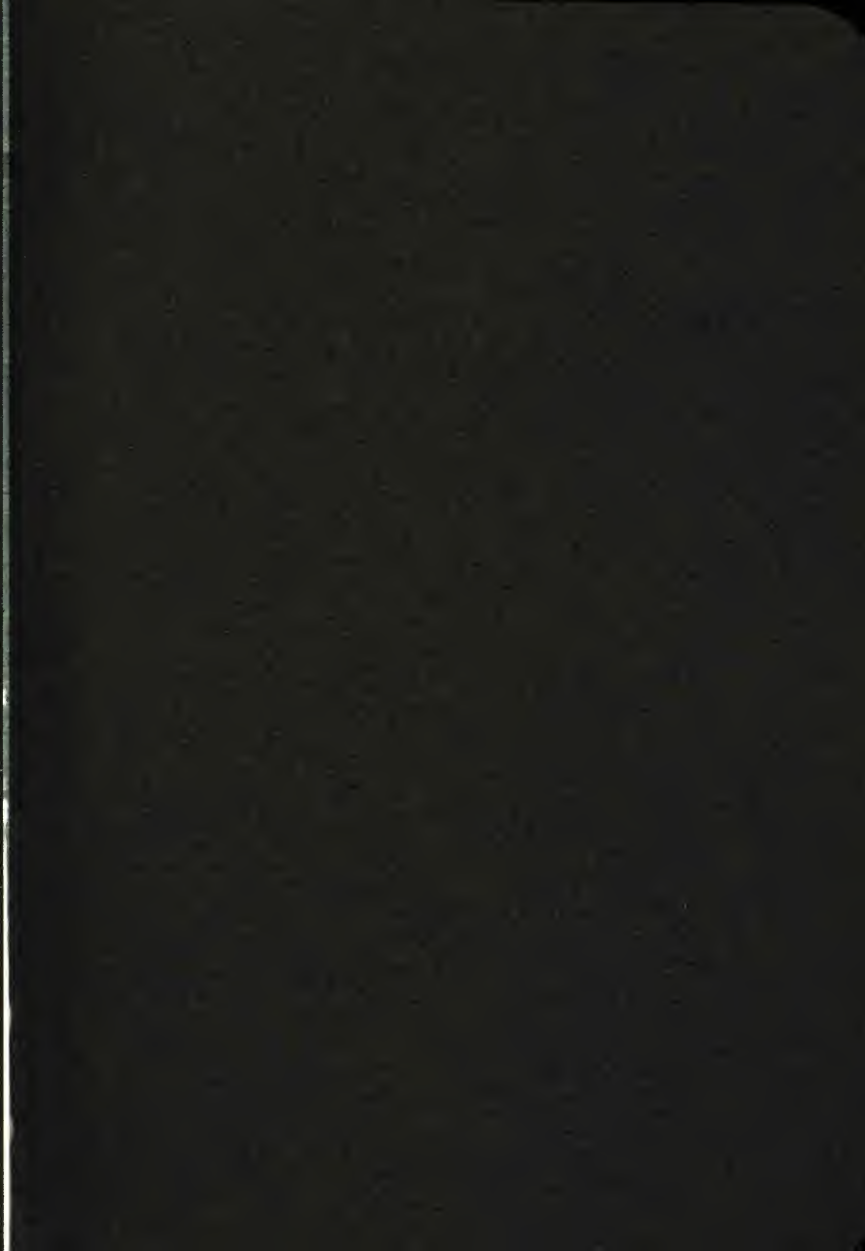
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GURNEY

BUILDERS & RADIALORS

GURNEY HEATER MFG. COMPANY